

PROGRAM BOOK

40TH IADR-SEA ANNUAL SCIENTIFIC MEETING 2026:
TRANSFORMING ORAL HEALTH RESEARCH ACROSS SOUTHEAST ASIA
PHNOM PENH | CAMBODIA | 17-19 SEPTEMBER 2026



Faculty of Dentistry, University of Puthisastra

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Prof. Jennifer E Gallagher, MBE
**President, International Association for Dental,
Oral and Craniofacial Research**

It gives me great pleasure to welcome all participants to the 2026 IADR Southeast Asian Division Meeting in Phnom Penh, Cambodia. Scientific progress is enhanced by our ability to come together—across disciplines, institutions, borders, and generations—to exchange knowledge, challenge existing thinking and collaborate on new ideas. This meeting provides a valuable opportunity for the oral, dental, and craniofacial research community to do exactly that.

The strength of the International Association for Dental, Oral, and Craniofacial Research lies in its diverse and connected global community. The Southeast Asian Division plays an important role in that community by bringing together researchers, clinicians, educators, and students whose expertise and perspectives contribute to the continued advancement of oral health research, both within the region, and around the world.

I am particularly encouraged by the opportunities that meetings such as this create to support and inspire emerging researchers. Fostering the next generation of scientific leaders is essential to the future of our field. Through mentorship, collaboration, and the sharing of knowledge and experience, we can create an environment in which new ideas flourish, equitable collaborations emerge and meaningful discoveries can be translated into improved oral health.

During my presidential term, I am calling on members to reflect on how we can deepen relationships, globally, regionally and locally as we [partner with purpose](#) to support our mission. The mission of ‘driving dental, oral and craniofacial research for health and well-being worldwide’ is critical to the effective implementation of the Global Strategy and Action Plan, ([WHO, 2030](#)). Thus, this is an important moment for our scientific community to work together: to influence our governments in developing research [strategies for oral health](#), to seek funding, to partner in delivering research excellence, to translate evidence into action, and to drive meaningful, lasting change in support of better oral health for the world. As we “Partner with Purpose,” I would value your support in shaping what effective, equitable partnership in research looks like in practice—and in showcasing examples from across our community.

My sincere thanks go to the Organizing Committee, speakers, contributors, and all those whose dedication has made this meeting possible, and I wish everyone a successful meeting in Phnom Penh and look forward to welcoming you to the IADR/APR General Congress in Melbourne, June 2027.

Professor Jenny Gallagher MBE

President, International Association for Dental, Oral, and Craniofacial Research



Prof. Ian Rouse
President and Vice-Chancellor,
University of Puthisastra

It is my great pleasure, on behalf of the University of Puthisastra, to welcome you to Phnom Penh and to the **40th Annual Scientific Meeting of the International Association for Dental, Oral and Craniofacial Research – Southeast Asian Division (IADR-SEA 2026)**.

We are deeply honoured that the University of Puthisastra and our Faculty of Dentistry have the privilege of hosting this important regional scientific meeting in Cambodia.

The theme of this year's conference, **"Transforming Oral Health: Innovation, Equity, and Impact,"** could not be more timely.

Across Southeast Asia, we are witnessing remarkable advances in dental, oral and craniofacial science. New technologies, digital dentistry, artificial intelligence and increasingly sophisticated approaches to research offer enormous possibilities. Yet innovation alone is not enough. Our ultimate measure of success must be whether new knowledge improves the health and wellbeing of the people and communities we serve. This is why **equity and impact** are so important.

Across our region, significant inequalities in access to oral healthcare remain, particularly for children, disadvantaged communities and people living outside major urban centres. Universities, researchers and health professionals therefore have a responsibility not simply to generate knowledge, but to translate that knowledge into better prevention, better clinical care, stronger health systems and healthier communities.

For Cambodia, hosting IADR-SEA 2026 is especially significant. Our country is strengthening its health professions education, research capability and international partnerships. Bringing leading researchers, clinicians, educators and emerging scholars from across Southeast Asia and beyond to Phnom Penh provides an exceptional opportunity to learn from one another, create new collaborations and inspire the next generation of Cambodian researchers.

I am particularly pleased that this meeting provides such a strong platform for **students, postgraduate researchers and early-career investigators**. The future of oral health research in Southeast Asia will depend upon our ability to identify talented young people, give them opportunities to ask important questions, connect them with experienced mentors and support them to become confident researchers and leaders.

At the University of Puthisastra, we believe that research, education and clinical practice should reinforce one another. Research strengthens teaching; excellent teaching develops questioning and capable health professionals; and strong clinical engagement ensures that our research remains connected to the real needs of patients and communities. Scientific meetings are at their most valuable when the conversations and collaborations they create continue long after the closing ceremony.

I extend my sincere appreciation to IADR and the Southeast Asian Division, our distinguished speakers, researchers, sponsors and partners, and especially to the Faculty of Dentistry and the Local Organizing Committee whose commitment has made this meeting possible.

To all our international and Cambodian guests, **welcome to the University of Puthisastra, welcome to Phnom Penh, and welcome to Cambodia.**

May the 40th IADR-SEA Annual Scientific Meeting be remembered not only for excellent science, but for the partnerships it creates and the contribution those partnerships make to better and more equitable oral health across Southeast Asia.

Professor Ian Rouse

President & Vice-Chancellor, University of Puthisastra



Christopher H. Fox
Chief Executive Officer,
International Association for Dental, Oral and
Craniofacial Research

It is my great pleasure to extend a warm welcome to all participants in the 2026 IADR Southeast Asian Division Meeting in Phnom Penh, Cambodia.

This meeting represents an important opportunity for researchers, clinicians, academics, students, and other members of the oral health research community to share knowledge, explore new ideas, and strengthen the collaborations that are essential to advancing science and improving oral health around the world.

IADR is proud of the contributions of its Divisions and Sections in building strong research communities at the local and regional levels. The Southeast Asian Division plays an important role in fostering the exchange of ideas and expertise among colleagues from diverse backgrounds and disciplines across the region.

As we look toward the future, supporting the next generation of researchers remains particularly important. The curiosity, innovation, and dedication of emerging scientists will help shape the future of oral, dental, and craniofacial research and lead to new discoveries that can benefit communities worldwide.

I encourage all participants to take full advantage of the opportunities this meeting provides—not only to learn from the outstanding scientific program, but also to establish new connections, renew existing collaborations, and engage with the broader international research community.

On behalf of the International Association for Dental, Oral, and Craniofacial Research, I extend my sincere appreciation to the Organizing Committee, speakers, sponsors, and everyone whose efforts have made this meeting possible.

While I can't be with you in Phnom Penh, I hope to see many of you next year at the IADR/Asia Pacific Region General Session in Melbourne, Australia, on June 23-26, 2027.

I wish you a productive, inspiring, and memorable meeting.

Christopher H. Fox

Chief Executive Officer, International Association for Dental, Oral, and Craniofacial Research



Assoc. Prof. Dr. Christina Sim
**President, International Association for Dental,
Oral and Craniofacial Research
(Southeast Asian Division)**

The future of oral health in Southeast Asia will be shaped by the choices we make today: the questions we pursue, the partnerships we build, and our determination to ensure that scientific progress benefits every community. As we gather in Phnom Penh for the 40th IADR Southeast Asian (SEA) Division Annual Scientific Meeting, we share an ambition to move beyond discovery towards transformation, turning innovation into equitable solutions and research into lasting impact.

Our theme, “Transforming Oral Health: Innovation, Equity, and Impact,” speaks directly to this ambition. It calls us to harness advances in science and technology while remaining firmly focused on the needs of the diverse populations we serve.

Over these three days, I hope we will challenge established thinking, exchange bold ideas, nurture our young researchers, and forge collaborations that extend well beyond this meeting. Most importantly, may we strengthen Southeast Asia’s collective voice and contribution to global oral health research.

On behalf of the IADR-SEA Division, I warmly welcome each of you to this beautiful city and extend my heartfelt appreciation to the University of Puthisastra, the Local Organising Committee, our speakers, partners and participants, in contributing to the success of this Meeting.

Together, let us shape a healthier and more equitable future for all.

Associate Professor Christina Sim
President, IADR Southeast Asian Division



Prof. Dr. Anand Marya
Organizing Chairman, IADR-SEA 2026;
Dean, Faculty of Dentistry,
University of Puthisastra

It is with immense pleasure and heartfelt pride that I welcome you to the 40th Annual Scientific Meeting of the IADR Southeast Asian Division, held in the vibrant city of Phnom Penh, Cambodia.

Organizing an international research meeting of this stature is both a profound privilege and a significant responsibility. It represents far more than bringing together a scientific program, distinguished speakers, and research presentations. It is about creating a meaningful space where ideas can be exchanged freely, collaborations can take root, young researchers can be inspired, and scientific discovery can ultimately help improve oral health across our region and beyond.

We are deeply honored to welcome eminent speakers, researchers, clinicians, academicians, students, and professional leaders from many countries. For some delegates, this will be their first visit to Cambodia, making this occasion especially meaningful. Every international visitor helps strengthen Cambodia's connections with the global scientific community and provides an opportunity to showcase our country's growing capabilities in dental education, research, healthcare, and innovation. We hope your visit will also allow you to discover Cambodia's rich cultural heritage, remarkable history, enduring spirit, and the genuine warmth and hospitality of its people.

The scientific program has been carefully developed to reflect the diversity and evolving priorities of oral health research. Through keynote lectures, symposia, workshops, oral presentations, and poster sessions, we hope to encourage thoughtful discussion, generate new perspectives, and strengthen research networks throughout Southeast Asia. We particularly hope this meeting will inspire emerging investigators and give them the confidence, connections, and opportunities needed to shape the future of our profession.

On behalf of the Local Organizing Committee, I extend my sincere appreciation to the IADR Southeast Asian Division, our distinguished speakers, scientific committee, sponsors, institutional partners, volunteers, and every individual whose dedication has made this meeting possible. I also thank all delegates and researchers for contributing their valuable work and for traveling from near and far to join us. May this meeting be remembered not only for its scientific excellence, but also for the friendships formed, collaborations initiated, and shared commitment renewed. Welcome to Phnom Penh, welcome to Cambodia, and welcome to the 40th IADR-SEA Annual Scientific Meeting.

Professor Anand Marya

Chairman, Local Organizing Committee, 40th IADR Southeast Asian Division Annual Scientific Meeting



Prof. Dr. Siddharthan Selvaraj
Scientific Chair, IADR-SEA 2026;
Deputy Dean (Research), Faculty of Dentistry,
University of Puthisastra

It is my great honor and privilege to welcome you to the 40th Annual Scientific Meeting of the International Association for Dental, Oral and Craniofacial Research – Southeast Asian Division (IADR-SEA 2026), hosted by the Faculty of Dentistry, University of Puthisastra, Phnom Penh, Cambodia, from 17–19 September 2026.

This year's theme, "Transforming Oral Health: Innovation, Equity, and Impact," reflects the evolving landscape of dental, oral, and craniofacial research and the need to translate innovation and evidence into meaningful improvements in oral health.

The scientific program brings together keynote and plenary lectures, symposia, workshops, oral and poster presentations, and the Hatton Research Competition, providing a platform for researchers, clinicians, educators, students, and partners from Southeast Asia and beyond to exchange knowledge and foster collaboration.

As Scientific Chair, I am proud of the diversity and quality of the program and the strong contributions from researchers across the region. I sincerely thank Prof. Anand Marya, Conference Chair and Dean of Dentistry, University of Puthisastra, for his leadership, vision, and unwavering support. I also extend my heartfelt appreciation to the Organizing and Scientific Committees, IADR Southeast Asian Division, speakers, chairs, reviewers, presenters, sponsors, exhibitors, volunteers, and the University of Puthisastra team for their invaluable contributions.

Most importantly, I thank all researchers and young investigators for sharing their work and advancing the future of oral health research.

I warmly welcome all delegates to Phnom Penh and hope that IADR-SEA 2026 will inspire new ideas, meaningful collaborations, and lasting impact.

Let us work together to shape a future of oral health that is innovative, equitable, and impactful.

I wish you all a stimulating, productive, and memorable IADR-SEA 2026.

Assoc. Prof. Dr. Siddharthan Selvaraj
Scientific Chair, IADR-SEA 2026
Faculty of Dentistry, University of Puthisastra

IADR-SEA DIVISION COUNCIL MEMBERS (2025-2027)



*Assoc. Prof. Dr. Christina Sim
(President)
Singapore*



*Prof. Anand Marya
(President Elect)
Cambodia*



*Assoc. Prof. Dr. Hoang
Trong Hung
(Immediate Past President)
Vietnam*



*Dr. Preethi Prajod
(Secretary)
Singapore*



*Prof. Dr. Waruna Dissanayaka
(Treasurer)
Hong Kong*



*Prof. Dr. Ariel Go
(Councillor)
Philippines*



*Prof. Dr. Wei Jen
Chang
(Councillor)
Taiwan*



*Assoc. Prof. Dr. Nareudee
Limpuangthip
(Councillor)
Thailand*



*Assoc. Prof. Dr. Armelia
Sari Widyarman
(Councillor)
Indonesia*



*Prof. Dr. Noor Azlin Binti
Yahya
(Councillor)
Malaysia*



*Assoc. Prof. Dr. Nashib
Pandey
(Councillor)
Nepal*

LOCAL ORGANIZING COMMITTEE

Faculty of Dentistry, University of Puthisastra, Phnom Penh, Cambodia



Prof. Ian Rouse
President and Vice-Chancellor



Prof. Chea Sin
*Vice-President
(Academic Affairs)*



Prof. Anand Marya
Dean of Dentistry



A/P Dr. Soeun Sopharith
*Deputy Dean of Dentistry
(Academic Affairs)*



A/P Dr. Siddharthan Selvaraj
Deputy Dean of Dentistry (Research)



A/P Dr. Kalyan Kong
*Assistant Dean of
Dentistry*



Dr. Bhavna Nahata
*Assistant Dean of
Dentistry (Post
Graduate Studies)*



Dr. Kanchan Chukiyal
*Head of Dental Laboratory
Sciences*



Dr. Lao Ryna
Dental Thesis Coordinator



Ms. Nget Sopheak
*Dental Administration
Assistant*



Mr. Kang Mapha
*Dental lab Admin
Officer*



A/P San Techly
Program Coordinator



Dr. Ea Khemey
Assistant Dean Clinical Affairs



Ms. Thy Kimlai
Head of Basic Sciences



Ms. Tim Nina Lisa
*Dentistry Course
Coordinator*

Faculty of Dentistry, University of Puthisastra

STUDENT VOLUNTEERS

Faculty of Dentistry, University of Puthisastra, Phnom Penh, Cambodia



Tan Bunho
Dental Student



Tan Bunhuch
Dental Student



Nut So Pheap
Dental Student



Tun Meng
Dental Student



Heng Pichkourng
Dental Student



Pech Elene
Dental Student



Vuth Thainguon
Dental student



Pheach Rattanakpanha
Dental Student



La Bunmeng
Dental Student



Nov Chettra
Dental Student



Nob Channetra
Dental Student



Rouen Daly
Dental Student



Te Sengkim
Dental Student



Hor Lysa
Dental Student



Cheng Somba Morokot
Dental Student



Dy Yada
Dental Student



Ear Huoycheak
Dental Student



Samreth Odom
Dental Student

Faculty of Dentistry, University of Puthisastra

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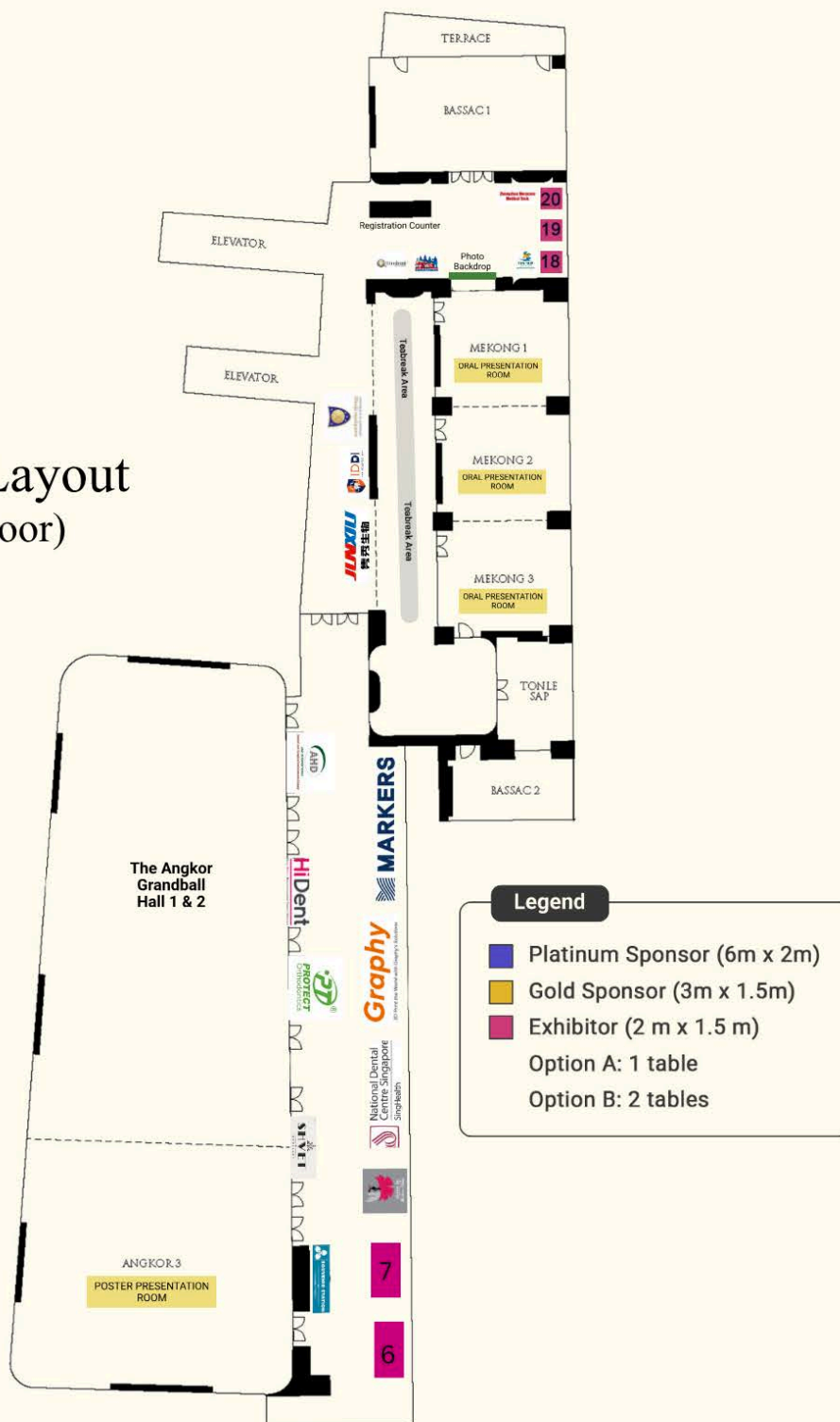
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Master Layout (12nd Floor)

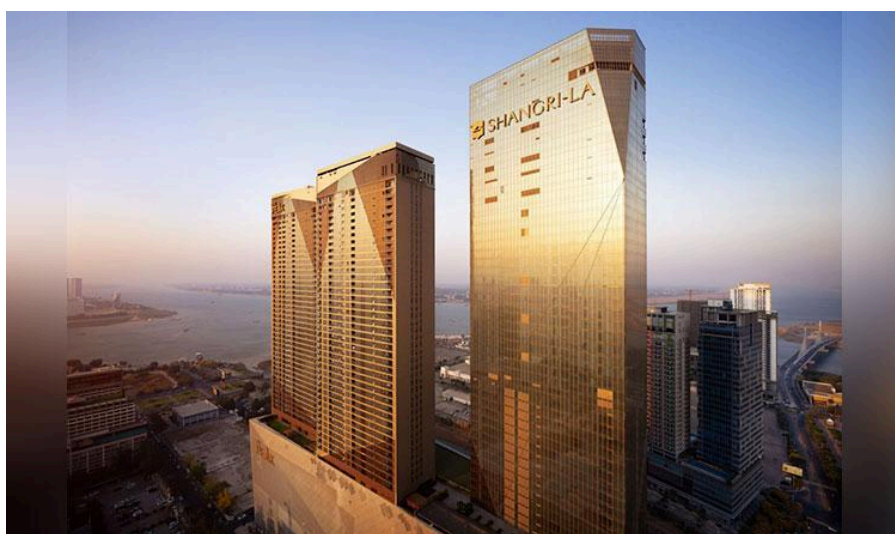
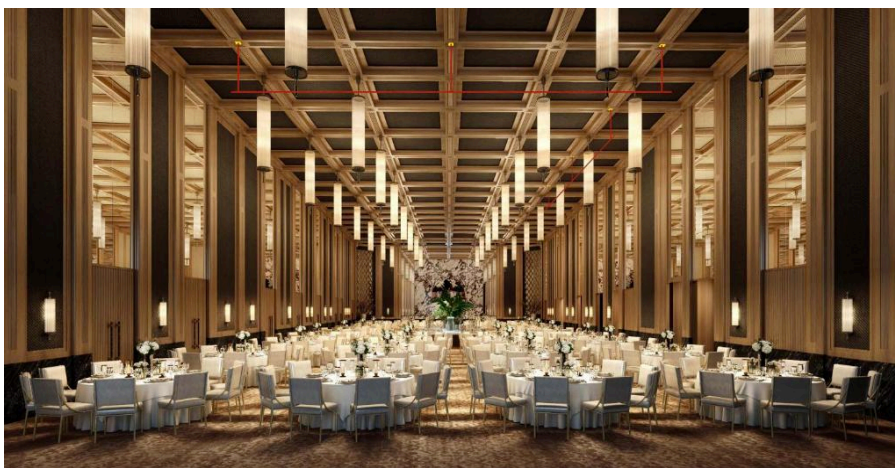


7. About the Venue

Shangri-La Phnom Penh, Cambodia

The 40th IADR Southeast Asia Annual Scientific Meeting 2026 will be held at Shangri-La Phnom Penh, a premium conference venue in Phnom Penh offering modern meeting facilities and hospitality services suitable for an international scientific meeting.

- Conference dates: 17–19 September 2026.
- Main conference level: Shangri-La Hotel – 12th Floor.
- Main plenary: Angkor Grand Ballroom 1 & 2.
- Parallel rooms: Bassac 1, Mekong 1, Mekong 2, Mekong 3, Angkor 3 / Hall 3.
- Lunch location: Kommune – 48th Floor.
- Gala Dinner: Angkor Grand Ballroom 1 & 2 on 18 September 2026 from 19:00 onwards.



8. Scientific Program – Full Three-Day Schedule

Day 1 – Thursday, 17 September 2026

Time	Programme / Parallel Activities
07:30–08:30	Registration opens; Delegate Registration; Sponsor Exhibition Opens; General & Hatton poster set-up (Angkor 3 / Hall 3).
08:30–08:40	National Anthem and Introduction to IADR, IADR-SEA & University of Puthisastra by Master of Ceremonies
08:40–08:50	Welcome Remarks – Prof. Ian Rouse , President and Vice-Chancellor, University of Puthisastra.
08:50–09:00	Welcome Remarks – Assoc. Prof. Dr. Christina Sim , President, International Association for Dental, Oral and Craniofacial Research (Southeast Asian Division)
09:00–09:10	Opening Remarks by Chief Guest – H.E. Dr. Hul Seingheng , Undersecretary of State at MISTI (Ministry of Industry, Science, Technology and Innovation)
09:10–09:20	Remarks and Announcement of the Official Launch of 40th IADR-SEA Annual Scientific Meeting – H.E Dr. Sann Vathana , Secretary of State, MoEYS (Minister of Education, Youth and Sport)
09:30–09:40	Appreciation And Recognition Photo Session
09:40–09:50	Official Opening & Group Photograph.
10:00–11:00	Morning Tea & Sponsor Exhibition.
11:00–12:00	Keynote Lecture 1 – Dr. Ankur Singh: Data to Policy: Translation Barriers in Oral Health Evidence. Parallel: Poster Session 1 – Hatton Junior & Senior (11:00–12:30).
12:00–13:30	Lunch Break – Kommune, 48th floor.
13:30–14:30	Keynote Lecture 2 – Dr. Ivan Lin: The SMA Era of Clear Aligners: Unlocking the Biomechanical Limitations of Traditional Aligner Therapy. Parallel oral presentations: Digital Dentistry, Implantology and Prosthodontics. Poster Session 2 – General (14:00–15:15).
14:30–15:30	Implantology & Regenerative Dentistry Symposium (Part 1): Prof. Hiroshi Egusa; Prof. Wei-Jen Chang.
15:30–16:00	Coffee Break, Poster Viewing & Sponsor Exhibition. Parallel: IADR SEA Mentor–Mentee Sharing Session (15:30-16:30)
16:00–17:30	Implantology & Regenerative Dentistry Symposium (Part 2): Dr. Sam Sovatdy; Panel Discussion. Parallel: IADR-SEA Division Council Meeting; Oral Presentations – Digital Dentistry, Implantology and Prosthodontics.



(Scan for full schedule)

Day 2 – Friday, 18 September 2026

Time	Programme / Parallel Activities
09:00–09:50	Keynote Lecture 3 – Asst Prof Hemant Vijaykumar Unadkat: Engineering Regeneration: AI-Designed Topographies for Next-Generation Oral Medical Devices. Parallel: Workshop 1; Hatton Senior & Junior Oral Competition; Oral Presentations – Population Oral Health, Epidemiology & Health Services Research; Poster Exhibition.
09:50–10:30	Keynote Lecture 4 – Prof. Firdaus Hariri: Oral and Craniofacial SEA Research Network: Regional Collaboration for Impactful Innovation, Application, Access and Affordability.
10:30–11:00	Morning Tea & Sponsor Exhibition.
10:45–12:45	Workshop 2 – Using Data to Inform Oral Health Interventions – Dr. Ankur Singh (Mekong 3).
11:00–12:30	Public Health Symposium: Clinical Assoc. Prof. Sobia Zafar; Prof. Walter Y.H. Lam; Panel Discussion. Parallel: Workshop 1; Hatton Competition; oral presentations.
12:30–14:00	Lunch Break – Kommune, 48th floor; Hatton and General Poster Exhibition.
14:00–14:40	Keynote Lecture 5 – Dr. Prasad Nalabothu: Intelligent Immersion: The Convergence of AI, AR, and VR in Cleft Care.
14:00–17:00	Workshop 3 – IADR-SEA Regional Development Workshop – Prof. May Wong & Assoc. Prof. Siddharthan Selvaraj (Bassac 1).
14:40–15:30	Keynote Lecture 6 – Prof. Aman Chowdhary: From Constraints to Innovation: Transforming Oral Pathology Education, Diagnostics and Research.
15:30–15:50	Afternoon Tea & Sponsor Exhibition.
15:50–17:30	Precision Orthodontics Symposium: Prof. Anand Marya; Dr. Viet Hoang; Prof. Priyanka Kapoor; Panel Discussion. Parallel: Hatton Competition; Materials/Regeneration/Innovation oral presentations; Oral Microbiology/Immunology/Genetics/Salivary Research oral presentations.
17:30–18:15	IADR-SEA Division AGM (Bassac 1).
19:00 onwards	Gala Dinner – Angkor Grand Ballroom 1 & 2.



(Scan for full schedule)

Day 3 – Saturday, 19 September 2026

Time	Programme / Parallel Activities
08:30–09:30	Keynote Lecture 7 – Dr. Kim Yong Jin: Clinical Considerations about Implant Design: For Immediate Placement, Immediate Loading & All-on-X Treatment.
09:00–12:00	Workshop 5 – Treat Malocclusion Easier with Self Ligating System – Dr. Ari Harsoputranto (Mekong 1)
09:00–12:00	Workshop 6 – Shape Memory Direct Printed Aligners: The Future of Digital Orthodontics – Dr. Jatin Gambhir & Dr. Tanveer Ahmed Khan (Mekong 2).
09:40–10:40	Digital Dentistry Symposium (Part 1): Prof. Dr. Katsushi Okazaki; Dr. Prasad Nalabothu.
10:00–13:00	Workshop 7 – Clinical Consideration about Implant Design and Why Does the Implant Design Matter? – Dr. Kim Yong Jin (Mekong 3).
10:40–11:00	Morning Tea & Sponsor Exhibition.
11:00–12:00	Digital Dentistry Symposium (Part 2): Assoc. Prof. Dr. Hank Ding-Han Wang; Panel Discussion.
12:00–13:00	Lunch Break – Kommune, 48th floor.
13:00–14:30	Official Closing Ceremony: Award Ceremony; recognition of IADR-SEA Division Council, Scientific Committee, Sponsors and LOC; next host announcement/presentation; closing remarks by Prof. Dr. Anand Marya and Clinc. Assoc. Prof. Dr. Christina Sim.

9. Keynote Speakers

	Assoc. Prof. Dr. Ankur Singh Designation: Chair, Lifespan Oral Health; Associate Professor Organisation: The University of Sydney City / Country: Sydney, Australia Session: Keynote Lecture Date / Time / Room: 17 Sep 2026 11:00–12:00 Angkor Grand Ballroom 1 & 2 Topic: Data to Policy: Translation Barriers in Oral Health Evidence
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Brief Biography

Associate Professor Ankur Singh is a public health academic and epidemiologist whose research focuses on the social and structural determinants of health across the life course, with particular emphasis on reducing inequalities in oral health. He leads the Lifespan Oral Health program at the University of Sydney and works at the intersection of causal inference, policy-relevant data analysis and community-engaged research. His work builds partnerships across academia, policy and service delivery to support evidence-informed oral health interventions.

Session Abstract / Description

Oral diseases are highly prevalent and marked by persistent social inequalities, despite being largely preventable. Effective preventive interventions target causal risk factors including unhealthy diet, tobacco and alcohol use, while fluoride-based interventions and preventive dental care can reduce the incidence and progression of oral diseases. Yet the global public health burden remains substantial, and health systems continue to struggle to meet population treatment needs. This reflects a crucial disconnect between evidence that interventions are effective and evidence about their capacity to reduce current and future disease burden and oral health inequities at the population level.

Addressing this disconnect requires moving beyond estimates of average intervention effects towards more granular evidence about which interventions work, for whom, under what circumstances, and with what consequences for health equity. This talk will discuss how complementary quantitative approaches, including causal inference and simulation modelling, can be integrated with qualitative evidence on lived experiences to strengthen the selection, targeting and implementation of population oral health interventions. Causal inference can help estimate intervention effects across population groups, while simulation modelling can project their longer-term impacts on disease burden, inequalities and costs. Qualitative evidence can further identify contextual factors shaping intervention acceptability, feasibility and implementation. Bringing these forms of evidence together, a precision policy framework for health equity will be presented as an approach to support policymakers in identifying and prioritising interventions according to their effectiveness, distributional and equity impacts, feasibility, implementation context and costs, with the ultimate goal of maximising population oral health while reducing avoidable inequalities.



Dr. Ivan Lin

Designation: Medical Director, Dr. Clear Aligner; Ortho Director, Shanghai QingShanYue Dental Clinic

Organisation: Dr. Clear Aligner / Shanghai QingShanYue Dental Clinic

City / Country: Taiwan

Session: Keynote Lecture

Date / Time / Room: 17 Sep 2026 | 13:30–14:30 | Angkor Grand Ballroom 1 & 2

Topic: The SMA Era of Clear Aligners: Unlocking the Biomechanical Limitations of Traditional Aligner Therapy

Brief Biography

Dr. Ivan is an orthodontic clinician and aligner educator with training in orthodontics, implant dentistry and business administration. He serves as Medical Director of Dr. Clear Aligner and Orthodontic Director of Shanghai QingShanYue Dental Clinic, and is an adviser to Lins Dental Technician Ltd. He has also served as a speaker for Invisalign and SPARK aligner systems and previously held an operational leadership role at Hangzhou Dental Hospital.

Session Abstract / Description

1. Limitations of conventional clear aligners: Challenges associated with thermoformed aligners in complex tooth movements and biomechanical control.
2. Breakthroughs in appliance design: Direct 3D printing overcomes the limitations of conventional model-based thermoforming and provides greater freedom in thickness, geometry, and functional design.
3. Clinical application potential: Exploring its potential in complex tooth movements, arch expansion, mandibular advancement, and improved control in the transverse, vertical, and sagittal dimensions.



Asst. Prof. Dr. Hemant Vijaykumar Unadkat

Designation: Clinician Scientist

Organisation: National Dental Center Singapore (NDCS)

City / Country: Singapore

Session: Keynote Lecture

Date / Time / Room: 18 Sep 2026 | 09:00–09:50 | Angkor Grand Ballroom 1 & 2

Topic: Engineering Regeneration: AI-Designed Topographies for Next-Generation Oral Medical Devices

Brief Biography

Dr. Hemant Unadkat is an Assistant Professor at Duke-NUS Medical School, Clinician Scientist, Principal Investigator at the National Dental Centre Singapore. His innovative lab focuses on using biomaterials engineering and micro- and nanotechnologies to improve oral health through craniofacial tissue regeneration and disease modelling. His research programme merges discovery and application, incorporating high-throughput technologies, cell biology, and artificial intelligence for practical clinical use.

Dr. Unadkat's long-term goal is to make a lasting impact on craniofacial tissue engineering. His work has been published in reputable journals, such as PNAS, and highlighted in Nature, Nature Materials, and Nature Methods. With over S\$6 Million in research funding and numerous patent applications, Dr. Unadkat demonstrates dedication to advancing his field. He is only the second dentist in Singapore to receive the prestigious Ministry of Health and National Medical Research Council Transition Award. Recently, he has also received the NMRC Clinician Scientist Individual Research Grant.

Session Abstract / Description

Regenerative dentistry requires biomaterials that move beyond passive structural support to actively instruct cellular behaviour and tissue healing. Our work explores how throughput surface topography screening, artificial intelligence (AI), biomaterials engineering and translational research can be integrated to develop a new generation of instructive oral medical devices. Central to this approach is Cellompic, a high-throughput screening platform comprising 160 defined microtopographies, enabling systematic interrogation of cell– material interactions and identification of topographical cues that regulate clinically relevant biological responses.

Machine-learning and explainable-AI approaches are used to relate geometric descriptors to cellular phenotypes and guide selection of bioactive surfaces. This platform has been applied across multiple regenerative challenges. OssyCure, a bioresorbable guided bone regeneration membrane, demonstrates translation of an identified topography from screening through device manufacturing and large-animal validation. The same platform is being extended towards endodontic regeneration, using patterned scaffolds to promote cell recruitment and pulp–dentine regeneration; soft-tissue integrating healing abutments, designed to enhance peri-implant cellular attachment and mucosal sealing; and GingiWise, a synthetic patterned membrane for gingival regeneration. Together, these programmes illustrate a platform

strategy in which AI-informed surface engineering transforms biomaterials into instructive devices, creating multiple translational pathways for oral and craniofacial regeneration.

	Prof. Dr. Firdaus Hariri Designation: Dean, Faculty of Dentistry; Professor, Department of Oro-Maxillofacial Surgical & Medical Sciences Organisation: Universiti Malaya / University of Malaya Medical Centre City / Country: Kuala Lumpur, Malaysia Session: Keynote Lecture Date / Time / Room: 18 Sep 2026 09:50–10:30 Angkor Grand Ballroom 1 & 2 Topic: Oral and Craniofacial SEA Research Network: Regional Collaboration for Impactful Innovation, Application, Access and Affordability
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Brief Biography

Professor Dr. Firdaus Hariri is Dean of the Faculty of Dentistry and Professor in Oro-Maxillofacial Surgical and Medical Sciences at Universiti Malaya. He is a senior consultant in oral and maxillofacial surgery at University of Malaya Medical Centre and holds qualifications in dentistry, oral and maxillofacial surgery, medicine and molecular medicine. His clinical and research interests include craniofacial surgery, trauma and oral implantology, with a strong focus on paediatric craniofacial and reconstructive surgery, tissue engineering, bone regeneration and translational research.

Session Abstract / Description

The Southeast Asian (SEA) region presents unique oral and craniofacial health challenges driven by diverse populations, socioeconomic disparities, and resource limitations. This lecture explores the formation and strategic vision of the Oral and Craniofacial SEA Research Network as a collaborative platform aimed at fostering impactful innovation in research and clinical practice. Emphasizing regional integration, the network strives to enhance the application of cutting-edge technologies, improve access to quality care, and develop affordable solutions tailored to regional needs. We will discuss the initiatives driving collaborative research, capacity building, and knowledge sharing among member countries, highlighting success stories and ongoing projects. Furthermore, the lecture will address the importance of interdisciplinary approaches, leveraging emerging technologies such as virtual planning and 3D printing, to revolutionize treatment paradigms. Ultimately, this network exemplifies how regional cooperation can accelerate innovation, bridge gaps in healthcare delivery, and ensure sustainable, equitable oral and craniofacial health outcomes across Southeast Asia.

	Dr. Prasad Nalabothu Designation: Researcher, Department of Pediatric Oral Health and Orthodontics Organisation: University of Basel City / Country: Basel, Switzerland Session: Keynote Lecture Date / Time / Room: 18 Sep 2026 14:00–14:40 Angkor Grand Ballroom 1 & 2 Topic: Intelligent Immersion: The Convergence of AI, AR, and VR in Cleft Care
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Brief Biography

Dr. Prasad Nalabothu is a craniofacial orthodontist, researcher, and educator affiliated with the Facial and Cranial Anomalies Group and the Department of Pediatric Oral Health and Orthodontics at the University Hospital Basel and the University of Basel, Switzerland. He graduated from Sri Ramachandra University, India, where he completed his Bachelor of Dental Surgery and Master of Dental Surgery in Orthodontics, followed by fellowship training in cleft and craniofacial orthodontics. He subsequently earned a Master of Advanced Studies in Lingual Orthodontics and a PhD in Biomedical Engineering from the University of Basel, Switzerland.

Much of his work is aimed at improving cleft and craniofacial care in newborns, growing children, and adults through interdisciplinary orthodontics, digital imaging, and artificial intelligence-driven technologies. His research focuses on craniofacial anomalies, smart implants, 3D reconstruction, and AI applications for diagnosis and treatment planning in low-resource settings. He has authored nearly 70 peer-reviewed publications and book chapters and serves as Associate Editor for the APOS Trends in Orthodontics journal.

Dr. Nalabothu is the recipient of the Early-Career Researcher Award from the American Cleft Palate-Craniofacial Association and the AI in Dentistry – Faculty & Clinician Impact Award from Harvard School of Dental Medicine. He was also invited as a panelist at the World Economic Forum in Davos to discuss regulatory certainty in MedTech, Dentistry, and Artificial Intelligence.

Session Abstract / Description

Cleft care requires meticulous planning, multidisciplinary collaboration and effective communication across multiple stages of treatment. This presentation explores how artificial intelligence, augmented reality and virtual reality can be integrated into cleft care. AI can support automated analysis and treatment planning, while AR and VR enable immersive visualization, simulation and interaction with complex craniofacial anatomy. Together, these technologies have the potential to strengthen clinical decision-making, education, multidisciplinary collaboration and patient-centred care.



Prof. Dr. Aman Chowdhary

Designation: Professor, Faculty of Dentistry

Organisation: Jamia Millia Islamia

City / Country: New Delhi, India

Session: Keynote Lecture

Date / Time / Room: 18 Sep 2026 | 14:40–15:30 | Angkor Grand Ballroom 1 & 2

Topic: From Constraints to Innovation: Transforming Oral Pathology Education, Diagnostics and Research

Brief Biography

Professor Aman Chowdhary is an oral pathologist at the Faculty of Dentistry, Jamia Millia Islamia, New Delhi. His academic interests include oral pathology, forensic odontology, forensic facial approximation, digital photography and analysis, orofacial genetics, oral premalignant lesions and conditions, scientific writing and research methodology. He has extensive teaching experience, has held academic and professional leadership roles, and has contributed to publications, scientific presentations and professional activities in oral pathology and forensic odontology.

Session Abstract / Description

This lecture presents the journey of the Department of Oral Pathology & Microbiology (including Forensic Odontology, Dental Anatomy and Oral Histology) at Jamia Millia Islamia, New Delhi, from a modest diagnostic setup serving marginalised populations to an evolving postgraduate academic and research-oriented unit.

The session will provide an overview of the large spectrum of oral lesions routinely managed in the department, ranging from common dental caries and inflammatory lesions to odontogenic cysts, tumours, premalignant disorders, and frank oral malignancies. The lecture will highlight how a central government dental institution in India has strengthened diagnostic services, academic training, and research activities despite limited resources.

Special emphasis will be placed on integrating newer technologies and AI-assisted approaches into oral pathology and forensic odontology. The department has recently incorporated advanced teaching and research infrastructure, including Binopad-enabled digital microscopy and penta-head microscope systems to support collaborative teaching, postgraduate discussions, digital pathology, and image analysis. Research activities include publications in oral pathology, forensic odontology, dental anthropology, ASUDAS-based analysis, dental age estimation, and multidisciplinary image analysis studies.

The lecture will also discuss how undergraduate students can be motivated to engage in early research through clinically relevant, anatomy-oriented applications of oral pathology and forensic sciences. Overall, the presentation aims to provide a holistic perspective on academics, diagnostics, research, and innovation within a developing oral pathology department in India.



Dr. Kim Yong Jin

Designation: Director

Organisation: YesMir Dental Clinic

City / Country: South Korea

Session: Keynote Lecture

Date / Time / Room: 19 Sep 2026 | 08:30–09:30 | Angkor Grand Ballroom 1 & 2

Topic: Clinical Considerations about Implant Design: For Immediate Placement, Immediate Loading & All-on-X Treatment

Brief Biography

Dr. Kim Yong Jin is Director of YesMir Dental Clinic. He earned his DDS from Dankook University and completed training in Oral and Maxillofacial Surgery at Seoul Asan Medical Center, University of Ulsan, where he also earned an MMSc. He is a Diplomate of the Korean Board of Oral & Maxillofacial Surgery and the Korean Board of Maxillofacial Plastic and Reconstructive Surgery.

Session Abstract / Description

Implant-supported prosthetic rehabilitation is a routine treatment with high success rates, but implant systems differ in surface treatment, implant–abutment connection, body design and thread configuration. This presentation focuses on implant body and thread design, an area less commonly used for classification despite its importance in surgical application. Dr. Kim will discuss the characteristics of different implant body and thread designs and their clinical implications, including considerations for immediate placement, immediate loading and All-on-X treatment.

10. Symposium Speakers

	Prof. Dr. Hiroshi Egusa, DDS, PhD, FRCPath Designation: Professor and Chair, Division of Molecular and Regenerative Prosthodontics Organisation: Tohoku University Graduate School of Dentistry City / Country: Sendai, Japan Session: Implantology & Regenerative Dentistry Symposium – Part 1 Date / Time / Room: 17 Sep 2026 14:30–15:30 Angkor Grand Ballroom 1 & 2 Topic: Transforming Oro-Maxillofacial Regeneration: Stem Cell and Nanotechnology Strategies for Clinical Impact
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Brief Biography

Professor Hiroshi Egusa is Professor and Chair of the Division of Molecular and Regenerative Prosthodontics at Tohoku University Graduate School of Dentistry. He also serves as Vice Director for Research and Education at Tohoku University Hospital and directs the Center for Advanced Stem Cell and Regenerative Research. His work spans prosthodontics, stem-cell biology, regenerative medicine and next-generation dental materials. He has received major international research awards, including the IADR Distinguished Scientist Young Investigator Award, and has authored more than 200 peer-reviewed publications.

Session Abstract / Description

Regenerative dentistry is transforming oral health through the integration of stem cell biology and nanotechnology. Induced pluripotent stem (iPS) cell-derived organoids can recapitulate tissue development, while control of the microenvironment and circadian rhythms helps direct lineage-specific differentiation. The session presents stem cell-based 3D grafts for regenerative therapy and nano-modified implants designed to promote periodontal ligament-like tissue formation, highlighting their potential clinical impact in oro-maxillofacial regeneration.



Prof. Dr. Wei Jen Chang, DDS, MS, PhD

Designation: Professor, School of Dentistry; Visiting Staff, Periodontology Division

Organisation: Taipei Medical University / Taipei Medical University Shuang Ho Hospital

City / Country: Taipei, Taiwan

Session: Implantology & Regenerative Dentistry Symposium – Part 1

Date / Time / Room: 17 Sep 2026 | 14:30–15:30 | Angkor Grand Ballroom 1 & 2

Topic: Next-Generation Bone Regeneration in Implant Dentistry: Biofabrication, Smart Hydrogels and Precision Regenerative Implantology

Brief Biography

Professor Wei Jen Chang is Professor at the School of Dentistry, Taipei Medical University, and Visiting Staff in the Periodontology Division at Taipei Medical University Shuang Ho Hospital. He holds a PhD in Dental Pathology from Nihon University and advanced qualifications in oral rehabilitation and dentistry from Taipei Medical University. He has held leadership roles in Taiwanese dental and implant organizations, serves as a Councilor of the IADR-SEA Division and as Secretary/Treasurer of the IADR Implant Research Group, and has received multiple academic and service awards.

Session Abstract / Description

Regeneration of alveolar bone remains a key challenge in implant dentistry, particularly in critical-sized defects, compromised bone quality and impaired healing. This lecture reviews emerging bioengineered platforms that combine 3D-printed scaffolds, functional hydrogels and bioactive therapeutics. It highlights PLA/PCL and β -TCP composite scaffolds, alginate/gelatin and RGD-modified hydrogels, growth-factor and exosome-based signaling, and bone organoid technologies. Together, these approaches illustrate how biomaterials science, tissue engineering and regenerative biology are converging toward precision regenerative therapies for implant dentistry.



Dr. Sam Sovatdy, DDS, MSc, D-APAI

Designation: Head of Oral Surgery; Lecturer and Clinical Tutor

Organisation: University of Puthisastra / Pisut Dental Surgery and Implant Clinic

City / Country: Phnom Penh, Cambodia

Session: Implantology & Regenerative Dentistry Symposium – Part 2

Date / Time / Room: 17 Sep 2026 | 16:00–17:30 | Angkor Grand Ballroom 1 & 2

Topic: Implant Site Management in the Posterior Mandible: Contemporary Strategies for Socket Preservation, Immediate Implant Placement, and Horizontal Ridge Augmentation

Brief Biography

Dr. Sam Sovatdy is Head of Oral Surgery at the University of Puthisastra and Founder of Pisut Dental Surgery and Implant Clinic. He earned his DDS from the University of Health Sciences, Cambodia, and an MSc in Oral and Maxillofacial Surgery from Mahidol University. He is a Diplomate of the Asia Pacific Academy of Implant Dentistry and currently serves as President of the Cambodian Association of Oral and Maxillofacial Surgeons and Vice-President of the Dental Implant Society of Cambodia. He teaches and supervises undergraduate and postgraduate implantology training.

Session Abstract / Description

The posterior mandible presents important anatomical and biological challenges for implant therapy, including limited keratinized tissue, lingual undercuts, dense cortical bone, post-extraction ridge resorption and proximity to the inferior alveolar nerve. This presentation reviews evidence-based approaches to socket preservation, immediate implant placement and horizontal ridge augmentation. It covers grafting materials, barrier membranes, primary stability, peri-implant gap management, guided bone regeneration and autogenous graft combinations, with clinical decision-making based on defect morphology, implant timing and restorative requirements.



Clinical Assoc. Prof. Dr. Sobia Zafar, BDS, MSc, DClinDent, PhD, FICD, FPFA, FDTFEd, SFHEA, MRACDS

Designation: Clinical Associate Professor; Discipline Lead in Paediatric Dentistry

Organisation: School of Dentistry, The University of Queensland
City / Country: Brisbane, Australia

Session: Public Health Symposium

Date / Time / Room: 18 Sep 2026 | 11:00–12:30 | Angkor Grand Ballroom 1 & 2

Topic: Transforming Oral Health Equity: Understanding Barriers to Children's Dental Service Use Among CALD Families in Australia

Brief Biography

Clinical Associate Professor Sobia Zafar is a specialist paediatric dentist and Discipline Lead in Paediatric Dentistry at The University of Queensland, where she is also affiliated with the Child Health Research Centre. Her research and clinical interests include children's oral health, special needs dentistry, digital dentistry and dental education. She has published extensively in peer-reviewed journals, supervises undergraduate and postgraduate research, and is an active national and international speaker. She also holds leadership roles within paediatric dentistry and IADR-related professional organisations and has received multiple awards for teaching, research and professional service.

Session Abstract / Description

Children from culturally and linguistically diverse (CALD) families in Australia continue to face barriers to timely and appropriate dental care. This presentation shares findings from a Queensland-wide survey of parents and caregivers, using the Capability, Opportunity, Motivation–Behaviour (COM-B) framework to explore barriers and enablers to children's dental service use. It examines language proficiency, oral health literacy, cost, insurance, service accessibility, cultural responsiveness and provider experiences, with the aim of informing equity-focused and culturally responsive strategies to improve access to oral healthcare for CALD children and families.



Prof. Dr. Walter Y.H. Lam

Designation: Clinical Associate Professor

Organisation: Faculty of Dentistry, The University of Hong Kong

City / Country: Hong Kong

Session: Public Health Symposium

Date / Time / Room: 18 Sep 2026 | 11:00–12:30 | Angkor Grand Ballroom 1 & 2

Topic: Transforming Oral Health Through Prosocial AI and Mobile Health

Brief Biography

Professor Walter Lam is a tenured Clinical Associate Professor in the Faculty of Dentistry at The University of Hong Kong and is specialist-trained in prosthodontics. He has authored more than 100 peer-reviewed publications and leads a research team recognised with international awards in innovation, clinical research and digital dentistry. He serves on the Science Committee of the World Dental Federation, is President-elect of the IADR Digital Dentistry Research Network, contributes to standards and policy work, and sits on the editorial boards of leading dental journals.

Session Abstract / Description

Oral diseases are among the most common yet largely preventable health conditions worldwide. This lecture explores how prosocial artificial intelligence and mobile health can support early detection, prevention and timely management of oral disease through accessible technologies such as the internet and smartphone cameras. It considers applications for risk assessment, screening and early identification, and how widespread mobile-device use may help reduce barriers to care, improve health equity and empower communities to take preventive action. The session also addresses the interdisciplinary collaboration required to develop responsible, inclusive and community-oriented digital oral health solutions.



Prof. Dr. Anand Marya

Designation: Dean, Faculty of Dentistry; Program Director of Orthodontics

Organisation: University of Puthisastra

City / Country: Phnom Penh, Cambodia

Session: Precision Orthodontics Symposium

Date / Time / Room: 18 Sep 2026 | 15:50–17:30 | Angkor Grand Ballroom 1 & 2

Topic: Integrating AI, Digital Technologies and Precision Care in Orthodontics

Brief Biography

Professor Anand Marya is Dean of the Faculty of Dentistry at the University of Puthisastra, Cambodia, and Professor of Orthodontics. He is President-Elect of the IADR Southeast Asian Division and serves on the IADR Asia Pacific Region Board and Research Development Programme Committee.

An orthodontist, educator, and researcher, Professor Marya holds doctoral and postgraduate qualifications in oral biology, orthodontics, and orthodontic research, alongside fellowships from the Royal Colleges of Surgeons of England, Edinburgh, and Glasgow. His scholarly work focuses on artificial intelligence, digital orthodontics, craniofacial biology, clinical innovation, and dental education.

He has authored more than 260 peer-reviewed publications and has been recognized among Stanford–Elsevier’s world’s top 2% of scientists for both 2024 and 2025 and is ranked 3rd in Cambodia in the country rankings. The ScholarGPS ranked him 7th worldwide in Orthodontics and 48th in Dentistry in the prior 5 years category. Based in Cambodia since 2016, he is committed to strengthening research capacity, interdisciplinary collaboration, and evidence-based oral healthcare across Southeast Asia, while mentoring emerging researchers and advancing equitable, technology-enabled dental education and clinical practice throughout the region and internationally, globally.

Session Abstract / Description

Artificial intelligence and digital technologies are redefining orthodontics by enabling objective diagnosis, predictive treatment planning, personalized biomechanics, and continuous outcome assessment. This presentation critically examines the progression of AI from automated diagnostic support toward an intelligent clinical partner within precision orthodontic care. Applications discussed include automated landmark identification and cephalometric analysis, three-dimensional imaging, tooth segmentation, skeletal maturation assessment, treatment-response prediction, digital treatment simulation, remote monitoring, and patient-specific appliance design. Particular emphasis will be placed on integrating multimodal imaging and biological data to improve risk stratification and support adaptive decision-making. Emerging approaches, including digital twins and biomechanical modelling, may further enhance individualized treatment planning. However, clinical translation requires external validation, representative datasets, explainable outputs, interoperability, and ethical governance. Using evidence and clinically relevant examples, this session will demonstrate how AI-enabled workflows can augment orthodontic expertise while preserving professional accountability, patient autonomy, and equitable care across diverse populations, particularly within Southeast Asia.



Dr. Viet Hoang, DDS, MSc

Designation: Lecturer, Department of Orthodontics and Pedodontics;
CEO & Co-Founder

Organisation: Van Lang University; Singdent Dental Clinic; IDDI
Academy; Singapodent & Singalign Laboratory

City / Country: Vietnam

Session: Precision Orthodontics Symposium

Date / Time / Room: 18 Sep 2026 | 15:50–17:30 | Angkor Grand
Ballroom 1 & 2

Topic: 3D Printing and Shape Memory Clear Aligner Applications: From
Evidence to Clinical Practice

Brief Biography

Dr. Viet Hoang is a lecturer in the Department of Orthodontics and Pedodontics at Van Lang University, Vietnam, and CEO and Co-Founder of Singdent Dental Clinic, IDDI Academy, Singapodent and Singalign Laboratory. He holds a Master of Science in Mechanical and Design Engineering from Kasetsart University, Thailand. His clinical and research interests include orthodontic biomechanics, MARPE, digital orthodontics, 3D printing and clear aligners. He is an international speaker and researcher with peer-reviewed publications and is a member of the World Federation of Orthodontists, American Association of Orthodontists and Vietnamese Association of Orthodontists.

Session Abstract / Description

Digital technologies are rapidly transforming orthodontics, with direct 3D printing and shape-memory materials creating new possibilities for clear aligner design, fabrication and clinical application. This lecture reviews the current scientific evidence supporting directly printed and shape-memory clear aligners and translates these developments into practical clinical workflows.

Topics include material characteristics, printing accuracy, post-processing, dimensional stability, mechanical behaviour, force delivery and the influence of design parameters on orthodontic biomechanics. Clinical examples will illustrate virtual treatment planning, appliance design, fabrication, delivery and refinement, while also addressing limitations related to biocompatibility, manufacturing consistency, long-term stability, regulation and the gap between laboratory evidence and clinical outcomes.



Prof. Dr. Priyanka Kapoor

Designation: Professor and In-Charge, Department of Orthodontics, Faculty of Dentistry

Organisation: Jamia Millia Islamia

City / Country: New Delhi, India

Session: Precision Orthodontics Symposium

Date / Time / Room: 18 Sep 2026 | 15:50–17:30 | Angkor Grand Ballroom 1 & 2

Topic: Biofluids as Windows to Orthodontic Biology: Proteomics and Multi-Omics for Precision Care

Brief Biography

Dr. Priyanka Kapoor is Professor and In-Charge, Department of Orthodontics, Faculty of Dentistry, Jamia Millia Islamia, New Delhi and Adjunct Faculty, Dept. of Orthodontics & Dentofacial Orthopedics, Dr. D. Y. Patil Dental College and Hospital, Pimpri, Pune, India. She completed her BDS from Government Dental College, Patiala, and MDS in Orthodontics from AIIMS, New Delhi, in 2006.

With over two decades of academic and research experience, she is a committed educator and researcher in orthodontics and dental sciences. She has attained Fellowships in Forensic Odontology (2018) and ISDR (2023). Her key research interests include evidence-based dentistry, bi biography biography Mayological mediators, mandibular condylar cartilage growth, obstructive sleep apnea (OSA), forensic age estimation, salivary diagnostics, and translational orthodontic research. She has authored/co-authored over 60 publications and 10 book chapters with over 1500 citations, including several systematic and scoping reviews. She also served as editor of the Springer volume Dental Age Assessment: A Global Perspective (2026).

Dr. Kapoor holds two design patents and three copyrights and is a recipient of the prestigious Moyers Symposium Award, Michigan, USA, among her many awards. She received the 3M Unitek IOS Research Grant (2020), leading to the development of the “OSA Risk Assessment Tool” mobile application. She actively contributes to interdisciplinary research, diagnostic biological mediator research including microRNAs in saliva and GCF particularly in mandibular condylar cartilage growth and OSA risk assessment in young patients.

Session Abstract / Description

Precision orthodontics aims to move beyond conventional morphology-based diagnosis and treatment towards individualized care informed by the biological characteristics and predicted response of each patient. Biofluids, particularly saliva, offer a minimally invasive and clinically accessible source of molecular information that may capture dynamic changes associated with growth, tissue adaptation, treatment response, and disease risk. Within this emerging field, proteomics provides an opportunity to characterize the functional protein landscape of the patient, while integration with other omic approaches may provide a more comprehensive biological picture.

This lecture will explore the potential of saliva and other biofluids as windows into orthodontic biology, with a particular focus on proteomics and its integration with complementary molecular and digital approaches. Our work on salivary microRNAs, including miR-145, miR-200a and miR-675, during functional appliance therapy demonstrates the potential of saliva to reflect molecular changes associated with mandibular condylar adaptation and skeletal response. Our research using oral microbial profiling and flow cytometry in orthodontic patients at risk for obstructive sleep apnea (OSA) provides an additional dimension of biological phenotyping, while our investigations of cytomorphometric and micronuclear alterations during orthodontic treatment explore biological monitoring of tissue responses.

What the audience will learn: The audience will understand how saliva and other biofluids can potentially serve as non-invasive windows into orthodontic biology, and why proteomics may be particularly valuable for translating molecular signals into clinically relevant biological phenotypes.

Finally, the lecture will consider the translational pathway from biomarker discovery to clinical application, emphasizing sample standardization, biological variability, analytical validation, reproducibility, data integration, and clinical interpretability. The overarching vision is to move towards an orthodontic model in which the clinical phenotype tells us what we see, biofluids reveal what is happening biologically, proteomics helps explain why, and predictive analytics guides what we do next.



Prof. Dr. Katsushi Okazaki, DDS, PhD

Designation: Clinical Assistant Professor, Department of Endodontics;
Clinical Associate Professor, Tokyo Dental College

Organisation: New York University College of Dentistry / Tokyo Dental
College

City / Country: New York, USA / Tokyo, Japan

Session: Digital Dentistry Symposium – Part 1

Date / Time / Room: 19 Sep 2026 | 09:40–10:40 | Angkor Grand
Ballroom 1 & 2

Topic: Augmented Reality Visualization of CBCT Data Outperforms
Conventional CBCT in Endodontics: Convergent Evidence Toward an
Accessible, Mobile, Network-Enabled Platform

Brief Biography

Professor Katsushi Okazaki is an endodontist and educator with academic appointments at New York University College of Dentistry and Tokyo Dental College. He holds a DDS and PhD and completed advanced graduate training in endodontics at NYU. His clinical, educational and research work focuses on endodontics, CBCT, 3D printing, augmented and extended reality, digital simulation and technology-enhanced dental education. He has led and participated in international research and educational projects exploring XR-supported treatment planning, clinical simulation and remote dental education.

Session Abstract / Description

Conventional two-dimensional and cross-sectional CBCT imaging requires clinicians to mentally reconstruct complex root canal anatomy, which can limit spatial understanding, procedural efficiency and patient communication. This presentation evaluates augmented and extended reality (AR/XR) visualization of CBCT-derived, patient-specific 3D models. Across complementary studies involving dentists and dental students, AR/XR improved understanding of root canal morphology, patient communication and efficiency compared with conventional CBCT. The work also demonstrates the feasibility of smartphone- and network-delivered visualization, supporting a scalable and accessible approach to advanced 3D-guided endodontic education and care.



Assoc. Prof. Dr. Hank Ding-Han Wang

Designation: Associate Professor

Organisation: College of Dentistry and Oral Medicine Innovation Center, National Yang Ming Chiao Tung University

City / Country: Taipei, Taiwan

Session: Digital Dentistry Symposium – Part 2

Date / Time / Room: 19 Sep 2026 | 11:00–12:00 | Angkor Grand Ballroom 1 & 2

Topic: From AI-Powered Dental Imaging to Extended Reality: Building an AI-Enhanced Ecosystem for Dental Education and Oral Healthcare

Brief Biography

Associate Professor Ding-Han Wang is a distinguished dental researcher, educator, and academic leader at National Yang Ming Chiao Tung University, Taiwan, where he serves as Deputy Chair of the College of Dentistry and Associate Director of the Oral Medicine Innovation Center. He is also a Visiting Associate Professor at Tohoku University, Japan. Professor Wang's interdisciplinary research integrates artificial intelligence, extended reality, digital dentistry, tissue engineering, and oral microbiome science to advance personalized care, clinical decision-making, and dental education. He has authored 33 PubMed-indexed publications, contributed to 15 conference proceedings, and holds two Taiwanese invention patents. His scholarship has received major international recognition, including first prizes in the IADR Hatton competitions in 2024 and 2025, the IADR Geriatric Oral Research J. Morita Award, and Taiwan's National Innovation Award. Beyond research, he promotes sustainable, technology-enabled oral healthcare and leads initiatives in university social responsibility, dental sleep medicine, and craniomandibular disorders in Taiwan.

Session Abstract / Description

Artificial intelligence is reshaping dentistry beyond automated image interpretation. This presentation describes a translational framework linking AI-assisted dental imaging with three-dimensional reconstruction and extended reality applications in dental education and oral healthcare. It highlights AI-based segmentation, oral health screening, immersive 3D learning resources, simulation-based training and improved patient communication. The session also addresses validation, usability, data governance, human-centred design and interdisciplinary collaboration, positioning AI and XR as complementary tools that strengthen professional judgement, expand access to high-quality learning and support more personalized care.

11. Workshop Speakers

Workshop Title – Systematic Reviews & Meta-analysis



Prof. Dr. Priyanka Kapoor

Designation: Professor and In-Charge, Department of Orthodontics, Faculty of Dentistry

Organisation: Jamia Millia Islamia

City / Country: New Delhi, India

Session: Workshop (Open)

Date / Time / Room: 18 September 2026 | 09:00–12:00 | Bassac 1

Topic: Systematic Reviews & Meta-analysis

Brief Biography

Prof. Priyanka Kapoor is Professor and In-Charge, Department of Orthodontics, Faculty of Dentistry, Jamia Millia Islamia, New Delhi. She has over two decades of academic and research experience with interests spanning evidence-based dentistry, salivary diagnostics, translational orthodontic research and systematic/scoping reviews.

Session Abstract / Description

The workshop will demonstrate development of transparent, reproducible electronic search strategies and their implementation, including AI-assisted search formulation to improve sensitivity and specificity. Attendees will gain experience in managing and screening search results using Rayyan for duplicate removal, study selection by multiple reviewers and structured data recording. The final component will cover reference management and reporting, with hands-on practice using Zotero and related tools to organize citations and generate reference lists efficiently.



Prof. Dr. Aman Chowdhary

Designation: Professor, Faculty of Dentistry

Organisation: Jamia Millia Islamia

City / Country: New Delhi, India

Session: Workshop (Open)

Date / Time / Room: 18 September 2026 | 09:00–12:00 | Bassac 1

Topic: Systematic Reviews & Meta-analysis

Brief Biography

Professor Aman Chowdhry is an oral pathologist at the Faculty of Dentistry, Jamia Millia Islamia, New Delhi. His academic interests include oral pathology, forensic odontology, forensic facial approximation, digital photography and analysis, orofacial genetics, oral premalignant lesions and conditions, scientific writing and research methodology. He has extensive teaching experience, has held academic and professional leadership roles, and has contributed to publications, scientific presentations and professional activities in oral pathology and forensic odontology.

Session Abstract / Description

The workshop will demonstrate development of transparent, reproducible electronic search strategies and their implementation, including AI-assisted search formulation to improve sensitivity and specificity. Attendees will gain experience in managing and screening search results using Rayyan, structured data recording, reference management and reporting.

Workshop Title – Using Data to Inform Oral Health Interventions



Assoc. Prof. Dr. Ankur Singh

Designation: Chair, Lifespan Oral Health; Associate Professor

Organisation: The University of Sydney

City / Country: Sydney, Australia

Session: Workshop (Open)

Date / Time / Room: 18 September 2026 | 10:45–12:45 | Mekong 3

Topic: Using Data to Inform Oral Health Interventions

Brief Biography

Associate Professor Ankur Singh is a public health academic and epidemiologist whose research focuses on the social and structural determinants of health across the life course, with particular emphasis on reducing inequalities in oral health. He leads the Lifespan Oral Health program at the University of Sydney and works at the intersection of causal inference, policy-relevant data analysis and community-engaged research. His work builds partnerships across academia, policy and service delivery to support evidence-informed oral health interventions.

Session Abstract / Description

Using applied examples from population oral health, participants will be introduced to counterfactual thinking and the assumptions required to move from observed associations towards causal interpretation. The workshop will examine key sources of bias, including confounding and selection, and introduce directed acyclic graphs (DAGs) as practical tools for representing causal assumptions and informing analytical decisions.

Workshop Title – IADR-SEA Regional Development

	Prof. Dr. May Chun Mei Wong Designation: Professor in Dental Public Health; Director, Clinical Research Centre Organisation: Faculty of Dentistry, The University of Hong Kong City / Country: Hong Kong Session: Workshop (Closed) Date / Time / Room: 18 September 2026 14:00–17:00 Bassac 1 Topic: IADR-SEA Regional Development Workshop
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Brief Biography

Professor May CM Wong is a Professor in Dental Public Health at the Faculty of Dentistry, HKU. She is the Director of the Clinical Research Centre at the faculty. She teaches courses on biostatistics and clinical research methods to graduate and undergraduate students. She has contributed to the research community as an editor of the Cochrane Oral Health Group, Associate Editor of Community Dentistry and Oral Epidemiology, and Statistical Consultant for Clinical Oral Implants Research.

Professor Wong has received the prestigious 2021 IADR Distinguished Scientist H. Trendley Dean Memorial Award, which recognizes investigators with meritorious research in epidemiology and public health and is considered one of the highest honors bestowed by IADR.



Assoc. Prof. Dr. Siddharthan Selvaraj

Designation: Deputy Dean (Research), Faculty of Dentistry

Organisation: University of Puthisastra

City / Country: Phnom Penh, Cambodia

Session: Workshop (Closed)

Date / Time / Room: 18 September 2026 | 14:00–17:00 | Bassac 1

Topic: IADR-SEA Regional Development Workshop

Brief Biography

Assoc. Prof. Dr. Siddharthan Selvaraj is an academic, researcher, clinician, epidemiologist, and academic leader serving as Deputy Dean (Research) at the University of Puthisastra, Cambodia. He holds a PhD in Periodontal Epidemiology and is a Diplomate of three Royal Colleges of Surgeons.

His expertise spans clinical dentistry, dental and periodontal epidemiology, global health, oral health inequalities, health policy, artificial intelligence in healthcare, and research methodology. He has authored extensively in international peer-reviewed journals and has contributed to major global health research initiatives.

He is actively engaged in research leadership, research supervision, curriculum development, scientific publishing, peer review, and international academic collaboration.

Workshop Title – Treat Malocclusion Easier with Self Ligating System



Dr. Ari Harsoputranto

Designation: Director of Postgraduate Programme for Asia Pacific

Organisation: The City of London Dental School

City / Country: Indonesia

Session: Workshop (Open)

Date / Time / Room: 19 September 2026 | 09:00–12:00 | Mekong 1

Topic: Treat Malocclusion Easier with Self Ligating System

Session Abstract / Description

Treat Malocclusion Easier with Self-Ligating System

Self-ligating systems offer clinicians an efficient and versatile approach to managing a wide range of malocclusions, from routine alignment to more complex orthodontic cases. However, successful treatment depends not only on bracket selection, but also on understanding prescription, biomechanics, anchorage, and appropriate force systems.

This practical workshop focuses on simplifying orthodontic treatment using self-ligating systems through clinically applicable strategies. Participants will learn how to select appropriate prescriptions, manage complex malocclusions, integrate self-ligating mechanics with TAD mini-screws, and optimize biomechanics to achieve predictable treatment outcomes.

Practical strategies for making self-ligating treatment more efficient and affordable in everyday clinical practice will also be discussed.

The course is designed to help clinicians treat malocclusions with greater confidence, simplicity, efficiency, and predictability.

Workshop Title – Shape Memory Direct Printed Aligners: The Future of Digital Orthodontics



Dr. Jatin Gambhir

Designation: Founder & CEO

Organisation: Align3D Dental Co.

City / Country: Phnom Penh, Cambodia

Session: Workshop (Open)

Date / Time / Room: 19 September 2026 | 09:00–12:00 | Mekong 2

Topic: Changes from Braces to Completely Digital Workflow – A Paradigm Shift of an Orthodontic Practice

Brief Biography

Orthodontist with advanced training and extensive clinical experience in complex orthodontic care, aligner therapy and digital orthodontics. Founder & CEO of Align3D Dental Co., pioneering direct 3D-printed aligners in Cambodia, and an international speaker on digital orthodontics and aligner manufacturing.

Session Abstract / Description

Digitalization and 3D printing are changing the course of dental and orthodontic practice very fast, now is the time to catch up before it is too late.

Times are changing from wire bending to straight wire techniques to robot wire bending machines to digitally designed indirect bonding techniques to even made to order customized bracket systems.

In this lecture we will focus on the next generation of directly printed aligners in today's clinical practice, how it can save chair time and increase revenue. In detail we will also discuss how to shift from braces to aligners efficiently, case consultations, aligner delivery and even side effects and how to overcome them.

At the end we will focus on management of various malocclusions, best ways to correct them with efficient use of time, attachments, extractions etc.



Dr. Tanveer Ahmed Khan

Designation: Principal Researcher

Organisation: Graphy Inc.; Adjunct Professor, Vishnu Dental College

City / Country: South Korea

Session: Workshop (Open)

Date / Time / Room: 19 September 2026 | 09:00–12:00 | Mekong 2

Topic: Hands-on Practical Workshop: From Digital Design & 3D Printing to Post-processing and Final Shape Memory Clear Aligner Fabrication

Brief Biography

Dr. Tanveer Ahmed Khan is a Material Scientist and Researcher with over 10 years of international experience in polymer science, bio-composites, advanced materials, and 3D printing technologies. He holds a Ph.D. in Chemical Engineering from University Malaysia Pahang, Malaysia, and completed his Postdoctoral Research in Adhesion & Bio-Composites at Seoul National University (SNU), South Korea.

He has worked across academia and industry in South Korea, the USA, Malaysia, and India. Currently, he serves as Principal Researcher at Graphy Inc., South Korea, and Adjunct Professor at Vishnu Dental College, India. His research focuses on shape memory polyurethane resins, direct 3D-printed orthodontic aligners, biomaterials, and advanced polymer applications.

Dr. Khan has extensive expertise in research and development, quality management, technical training, product commercialization, and clinical education. He has authored numerous scientific publications, book chapters, patents, and has received several international awards in recognition of his contributions to materials science and dental 3D printing technologies.

Session Abstract / Description

Directly 3D-printed shape memory aligners represent a significant advancement in clear aligner therapy by eliminating the need for thermoforming while enabling highly customized orthodontic treatment. However, the clinical performance and accuracy of these aligners rely heavily on a standardized manufacturing workflow. This presentation provides a comprehensive overview of the complete digital and post-processing workflow for Graphy Shape Memory Direct Printed Aligners, covering every stage from intraoral scanning and treatment planning to final packaging and storage.

The presentation highlights essential manufacturing protocols, including aligner shell design, slicing, compatible 3D printing systems, residual resin removal using centrifugation, support removal, nitrogen post-curing, boiling verification, polishing, ultrasonic cleaning, drying, and appropriate storage procedures. Special emphasis is placed on the scientific rationale behind nitrogen curing, the prevention of oxygen inhibition during photopolymerization, and the importance of quality control measures to achieve optimal polymerization, dimensional accuracy, transparency, mechanical properties, and shape memory performance.

Workshop Title – Clinical Consideration about Implant Design and Why Does the Implant Design Matter?

	Dr. Kim Yong Jin Designation: Director Organisation: YesMir Dental Clinic City / Country: South Korea Session: Workshop (Closed) Date / Time / Room: 19 September 2026 10:00–13:00 Mekong 3 Topic: Immediate Placement and Immediate Loading, Hands-on Practical Workshop – Clinical Application of Implant Design
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Brief Biography

Dr. Kim Yong Jin is Director of YesMir Dental Clinic. He earned his DDS from Dankook University and completed training in Oral and Maxillofacial Surgery at Seoul Asan Medical Center, University of Ulsan, where he also earned an MMSc. He is a Diplomate of the Korean Board of Oral & Maxillofacial Surgery and the Korean Board of Maxillofacial Plastic and Reconstructive Surgery.

Session Abstract / Description

Covers characteristics of implant body and thread design and their clinical implications, with emphasis on how implant design influences surgical application. The workshop also addresses implant design considerations in immediate placement and immediate loading, with a hands-on component applying implant design principles to clinical scenarios.

12. Oral Presentation Schedule

DIGITAL DENTISTRY, IMPLANTOLOGY AND PROSTHODONTICS

17 September 2026 | Mekong room 2 | 1:30 PM - 4:30 PM

Final ID	Presenting Author	Institution / Affiliation	Presentation Title	Time
D01	Haksrun Lao	Paragon International University	Prediction of Facial Soft Tissue Thickness from Skeletal Cephalometric Parameters Using Machine Learning: A Cross-Sectional Study in a Cambodian Population	1:30PM - 1:45PM
D02	Saritha Sivarajan	Faculty of Dentistry, Universiti Malaya	Development and Alpha Review of a Web-Based Training Module on Ethical Dental Advertising: A Mixed-Methods Study	1:45PM - 2:00PM
D03	Prasad Nalabothu	University of Basel	Digital Workflow Performance in Cleft Lip and Palate: Effect of Age, Morphology, and Clinical Setting	2:00 PM -2:15 PM
D04	Yasmin Kamarudin	Universiti Malaya	Perceptions on Social Media Advertising in Dentistry Among Dental Professionals in Malaysia	2:15PM – 2:30PM
D05	Norfarizza Khairil Anuar	University Teknologi Mara	Navigating the Oral Health Infodemic: Development and Validation of a Questionnaire Assessing Oral Health Misinformation Among Undergraduate Students	2:30PM – 2:45PM
D06	Kanchan Chaukiyal	University of Puthisastra	Effect of Nanoparticles on Type IV Die Stone Properties	2:45PM – 3:00PM
D07	Hao-Hueng Chang	School of Dentistry, College of Medicine, National Taiwan University, National Taiwan University Hospital	Injectable Photocurable β -TCP/GelMA Hydrogel for Flapless Bone Augmentation	3.00PM - 3:15PM
D08	Phuc Le Hoai	Pham Ngoc Thach University of Medicine, University of Medicine and Pharmacy	Six-month follow-up of temporomandibular joint space changes after mandibular reconstruction using patient-specific surgical guides versus the traditional method	3.15PM - 3:30PM
D09	Liyana Mohd Subri	Universiti Teknologi MARA (UiTM)	Artificial Intelligence for Tooth Wear Assessment: A Scoping Review	4:00PM - 4:15PM
D10	Sari Kurniawati	Universitas Brawijaya	Assessment of Condylar Height Differences During Orthodontic Treatment Using an Anterior Bite Plane	4:15PM – 4:30PM

POPULATION ORAL HEALTH, EPIDEMIOLOGY & HEALTH SERVICES RESEARCH

18 September 2026 | Mekong room 2 | 9:00 AM - 1:00 PM

Final ID	Presenting Author	Institution / Affiliation	Presentation Title	Time
E012	Arjun Rijal	Kathmandu University School of Medical Sciences	Comparison of Oral Health Related Quality of Life of the Patients with Chronic Periodontal Disease before and after Nonsurgical Periodontal Therapy	9:00AM – 9:15AM
E013	Izyan Hazwani Baharuddin	Faculty of Dentistry, Universiti Teknologi MARA	Understanding Grit Through Social Networks: An Egocentric Analysis of Dental Students' Support Systems	9:15AM - 9:30AM
E014	Tuan Le Quang	Pham Ngoc Thach University of Medicine	Self-Assessment of Essential Dental Competencies among Final-Year Dental Students	9:30AM – 9:45AM
E015	Mi Du	National Dental Centre Singapore	Reassessing the association between dental flossing and mortality: quantifying healthy-adherer confounding	9:45AM – 10:00 AM
E016	Sreylla Phally	University of Puthisastra	A study on the use of flipped classrooms among undergraduate dental students using an online digital platform at University of Puthisastra, Cambodia.	10:00AM - 10:15AM
E017	Ladusingh Rajpurohit	Dr. D.Y. Patil Dental College and Hospital	Assessing Dental Public Health Professionals' perception and Barriers on Food Insecurity in India: A Mixed-Method Study	10:15AM – 10:30AM
E018	Abhilasha Khanal	National Academy of Medical Sciences	Perception of Orthodontic-treatment-need among Nepalese patients and Dentists using IOTN	11:00AM - 11:15 AM
E019	Shilpa Sarawagi	National Dental Centre Singapore, Duke-NUS Medical School	A Worldwide Analysis of Dental Visits and Early Childhood Caries: Findings from the Global Consortium of Oral Health Birth Cohort Studies (GLOBICS)	11:15AM - 11:30 AM
E020	Ashish Kalhan	National Dental Centre Singapore, Duke NUS Medical School	Modelling Impact of Smoking Cessation on Tooth Loss in Asians	11:30AM - 11:45 AM
E021	Kalyan Kong	University of Puthisastra	Perception of Undergraduate Dental Student towards Postgraduate Study	11:45AM - 12:00 PM

E022	Hai Trieu Hoang	IDDI Academy	Factors Influencing Purchasing Behavior of Orthodontic Products and Equipment Among Dental Professionals in Vietnam	12:00 PM - 12:15PM
E023	Boriroth Rith	Preah Ang Duong Hospital	Management Strategies for Trigeminal Neuralgia: A Systematic Review of Pharmacological and Surgical Interventions	12:15PM - 12:30PM
E024	In Meei Tew	Faculty of Dentistry, The National University of Malaysia	Factors Associated with Oral Frailty Among Institutionalized Older Adults	12:30PM - 12:45PM
E025	Bathsheba Turton / Chanthya Sieng	Boston University, University of Puthisastra	Changes in Dental Caries Severity Among Cambodian Schoolchildren Pre- and Post-COVID-19: Evidence from the Healthy Kids Cambodia Program	12:45PM - 1:00PM

MATERIALS, REGENERATION AND INNOVATION RESEARCH

18 September 2026 | Mekong room 2 | 2:00 PM - 4:45 PM

Final ID	Presenting Author	Institution / Affiliation	Presentation Title	Time
R026	Zayim Razina Seenii Syed	National Dental Centre Singapore	Development and Validation of AeroShield: A Novel Air-Curtain Technology for Aerosol Mitigation in Dentistry Using Clinical Experiments and Computational Fluid Dynamics Simulations	2:00PM - 2:15PM
R027	Hemant Unadkat	National Dental Centre Singapore, Duke NUS Medical School	Explainable AI-Guided Synthetic Membranes Achieve 90% Filling in Guided Bone Regeneration	2:15PM - 2:30PM
R028	Chau Sang Lau	National Dental Centre Singapore, Duke-NUS Medical School	Magnesium-Releasing Bioresorbable Composite Scaffolds for Oral-Maxillofacial Bone Regeneration	2:30PM - 2:45PM
R029	Citra Kusumasari	Universitas Indonesia	SS-OCT Study Evaluation of Dentin Sealing Using an Enzymatic Smear Layer Deproteinizing Solution	2:45PM - 3:00PM
R030	Thantrira Porntaveetus	Chulalongkorn University	Beyond RUNX2: Extracellular Matrix Collapse and Prostaglandin Dysregulation Drive Osteogenic Failure in Cleidocranial Dysplasia	3:00PM – 3:15PM
R032	Noor Yahya	Universiti Malaya	Bleaching Effects on Ion-Releasing Restorative Colour Stability	4.00 PM-4:15PM
R033	Nurabidah Binti Mohamed Shukri	Faculty of Dentistry, UiTM	Fracture Resistance of Indirect Restorations: A Bibliometric Analysis of Publication Trends, Research Hotspots, and Collaboration Networks	4:15PM – 4:30PM
R034	Delphine Antony	Saveetha Dental College	Nano-Engineered Calcium Hydroxide–Zinc Oxide Intracanal Medicament: Physicochemical Characterization and Biological Evaluation	4:30PM - 4:45PM

ORAL MICROBIOLOGY, IMMUNOLOGY, GENETICS AND SALIVARY RESEARCH

18 September 2026 | Mekong room 3 | 2:00 PM - 4:45 PM

Final ID	Presenting Author	Institution / Affiliation	Presentation Title	Time
M035	Kanokwan Sriwattanapong	Center of Excellence in Precision Medicine and Digital Health, Department of Physiology, Faculty of Dentistry, Chulalongkorn University	Integrating Proteomic Profiles Across Dental Fluorosis Severities to Identify Homeostatic Disruption	2:00PM - 2:15PM
M036	Preethi Prajod	National Dental Centre Singapore	Multi-OMICS Analysis of Salivary Metagenome, Metabolome, and Epigenome in Gestational Diabetes	2:15PM - 2:30PM
M037	Kanistika Jha	College of Medical Sciences	Comparative study of various mouthwashes on gingival index and plaque index in patients with fixed orthodontic treatment.	2:30PM - 2:45PM
M038	Lufei Wang	Guangxi Medical University	Repurposing Dopamine Receptor Agonists: Targeting NAT10 for Periodontal Therapy	2:45PM - 3:00PM
M039	Sung-Jin Kim	Seoul National University School of Dentistry	A Genomic Atlas of 21 Orofacial Diseases Reveals Shared Genetic Architecture with Systemic Diseases	3:00PM – 3:15PM
M040	Siti Zulaikha Mohd Nasir	Universiti Teknologi MARA	Comparative Antimicrobial Activity of Palmitic Acid, Tocotrienol, Their Combination, and Sodium Fluoride Against Streptococcus mutans: A Preliminary Study	3:15PM – 3:30PM
M041	Zainab Akram	AIIMS New Delhi	Impact of Chemotherapy on Oral Microbiome Dysbiosis and Mucositis: A Systematic Review and Meta Analysis	3:30PM – 3:45PM

13. Hatton Junior Competition

Poster Session: 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3

Poster ID	Presenting Author	Institution / Affiliation	Presentation Title
P-01	Gia Hien Phan	University of Medicine and Pharmacy at Ho Chi Minh City	Dental Erosion In Patients With Gastroesophageal Reflux Disease: A Cross-Sectional Study
P-02	Hoang Kim Luong	University of Medicine and Pharmacy at Ho Chi Minh City	Dentist–Patient Gaps in Diabetes–Oral Health Awareness and Integrated Care
P-03	Uyen Nguyen	University of Medicine and Pharmacy at Ho Chi Minh City	Physician–Patient Gaps in Oral Health Integration into Diabetes Care
P-05	Aphireak Sokna	University of Puthisastra	General and Specific Personality Traits Predict Academic and Clinical Performance Among Cambodian Dental Students

14. Hatton Senior Competition

Poster Session: 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3

Poster ID	Presenting Author	Institution / Affiliation	Presentation Title
P-06	Viet Hoang	Kasetsart University	Comparative Biomechanical Efficacy Of Semi-Customized Marpe Devices With Bone-Borne And Tooth-Bone-Borne Designs In Different Maxillary Positions And Screws Configuration
P-07	Aiemeeza Rajali	Faculty of Dentistry, Universiti Teknologi MARA (UiTM)	Effects Of Printing Parameters On The Mechanical Properties Of 3d-Printed Flexible Denture Resins Before And After Thermocycling.
P-08	Sharon Tan	National University of Singapore, King's College London	Financial Incentives To Encourage Dental Care Utilisation: An Explanatory Sequential Mixed-Methods Study
P-09	John Tay	Duke-NUS Medical School, National Dental Centre Singapore	Tooth Retention And Disease Activity Over A 30-Year Horizon Of Periodontal Maintenance: A Longitudinal Multistate Life-Table Analysis
P-10	Toan Phan	Chulalongkorn University	Novel Salivary Gland-Oral Mucosa Multiorgan-On-Chip Unveils An Organ Crosstalk Leading To Oral Mucositis Alleviation

P-11	Ethiraj Lalith Prabha	Duke NUS Medical School, National Dental Centre Singapore	Sulfasalazine Enhances Post-Extraction Wound Healing In A Bisphosphonate-Treated Preclinical Model: A Drug-Repurposing Trial
P-12	Adillah Radhiah Roney	Universiti Teknologi MARA	Effects Of Linseed Oil Incorporation On The Glass Transition Temperature And Elemental Composition Of Pmma Denture Base Resin
P-13	Xiaowei Zhao	The University of Hong Kong	Can Subjective And Objective Masticatory Performance Predict Hrql In Older Adults?
P-14	Thu Linn	Taipei Medical University, The University of Osaka	Osteoblastic Evaluation Of Three-Dimensional Porcine-Derived Collagen Scaffolds For Bone Regeneration
P-15	Hlaing Myint Myat Aung	Taipei Medical University	3d-Printed B-Tcp/Pcl Composite Scaffolds For Enhanced Bone Regeneration
P-16	Hesti Witasari Jos Erry	Universitas Indonesia, YARSI University	Exosome-Loaded Amniotic Hydrogel Modulates Regenerative Dental Pulp Stem Cell Responses
P-17	Clarice Sabino	National University of Singapore	Digital Bioscore Integrating Material And Cells For Ai-Driven Biomaterial Design
P-18	Hut Vuthypiseth	University of Health Sciences	Burden And Demographic Factors Associated With Dental Caries Experiences Among School-Aged Children At Primary School Students In Siem Reap In 2026
P-19	Rahman Wahyudi	Faculty of Dentistry, Graduate Program in Oral Biology, Chulalongkorn University, Bangkok, Thailand	Iloprost Modulates Dental Pulp Inflammation Via Camp-Pka-Nfkb And Macrophage M2 Polarization
P-21	Chia-Wei Chiu	Kaohsiung Medical University	Effectiveness Of Line-Based Home Reminders On Interdental Cleaning And Periodontal Outcomes In Patients With Periodontitis: A Randomized Controlled Trial

15. General Poster Presentations Competition

Poster Session 1: 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3

Presenting Author	Institution / Affiliation	Presentation Title
Irvan Septrian Syah Putra Rasad	Faculty of Dentistry, Universitas Trisakti	Antibacterial, Antibiofilm, Antioxidant, and Anti-inflammatory Properties of Zizyphus mauritiana Leaf Extract for Oral Wound Healing: An In Vitro and In Vivo Study
Ryna Lao	University of Puthisastra	Digital Measurement and Analysis of the Cambodian Adult Soft Tissue Profile Across Different Skeletal Malocclusions: A Retrospective Study

Poster Session 2: 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3

Presenting Author	Institution / Affiliation	Presentation Title
Chanvisith Chorn	University of Health Sciences	Barriers to Research Participation Among Undergraduate Students: A Systematic Review
Vini Mehta	Dr. D. Y. Patil Dental College & Hospital, Dr. D. Y. Patil Vidyapeeth, Pune, University of Salamanca	Oral Health Status of War Veterans with Post-Traumatic Stress Disorder: A Systematic Review and Meta-Analysis
Thi Le Quyen Nguyen	Pham Ngoc Thach University of Medicine	Child-ODIP and Oral Health Status among Children Living with HIV in Ho Chi Minh City
Techly San	University of Puthisastra	Sugar Intake and Early Childhood Caries: A Cambodian Scoping Review
Chau Pham Thi Minh	Sai Gon Dr. Lam Dental Clinic	Clinical Effectiveness of In-House Clear Aligners for Space Closure
Gia Hy Luong	Pham Ngoc Thach University of Medicine	One-Year Progression of Early Childhood Caries among Preschool Children in a School-Based Oral Health Care Program
Trieu Ton	Pham Ngoc Thach University of Medicine	Effectiveness of NH4F Fluoride Varnish in Preventing Early Childhood Caries Progression: An ICDAS State-Transition Matrix Analysis
Khanh Nguyen Minh	National Hospital of Odonto - Stomatology in Ho Chi Minh City	Clinical Effectiveness of 38% Silver Diamine Fluoride for Early Childhood Caries Management: A Six-Month Randomized Trial
Kaung Khant Ye Mon	Taipei Medical University	Sol-Gel Sr-BCP Functionalization of Mg-1Ca Alloy for Dental Applications
Ankita Mathur	1Dental Research Cell, Dr. D. Y. Patil Dental College & Hospital, Dr. D. Y. Patil Vidyapeeth (Deemed to be University), Pune	Effectiveness of Interdental Brushes in the reduction of Periodontal disease: An Umbrella review
Swiluva Sumardy Ma	Tzu Chi School	The Impact of Listening to Music on Gut Health and Salivary Cortisol in Young Adults

Rohaida Abdul Halim	Universiti Teknologi MARA (UiTM)	Bibliometric and Scoping Review of Paediatric Dental Trauma
Edward Lo	University of Hong Kong	Association between masticatory performance and decline in cognitive function: a systematic review of longitudinal studies
Mohmed Isaqali Karobari	Saveetha Dental college and Hospital	Artificial Intelligence-Assisted Academic Writing in Dentistry
Leanna Nicole Balagot	University of Baguio	Utilization of Artificial Intelligence in Enhancing Knowledge and Attitudes Toward Oral Hygiene and Preventive Care Among High School Students
Asli Baysal	Izmir Katip Celebi University - Dentistry	Impact of Cephalometric Data on Space-Gaining and Anchorage Management Decisions in Clear Aligner Treatment Planning for Class II Malocclusions: A Two-Stage Survey Analysis
May Chun Mei Wong	The University of Hong Kong	Understanding Orthodontic Treatment Uptake Among Hong Kong Adolescents: A Qualitative Study
Yuga Maeda	Hiroshima University	Promoting effects of heat-not-burn tobacco on initiation of oral cancer
Ivan Virgilio Reyes	University Of Baguio	Experiences Of Families Facing Economic Challenges In Sitio Malagayuma, Paniqui, Tarlac On Preventive Oral Health Care
Zhaira Grail Andiso	Unciano Colleges Manila	Oral Health Outreach: An assessment of Dental Mission Services in Del Carmen, Siargao
Sandhya Raghu	Saveetha Dental College and Hospital	Antioxidant, Anti-Inflammatory, and Antibiofilm Activity of Aspartic Acid-Loaded PCL Nanofibers
Thi Uyen Anh Dong	Taipei Medical University	Polydopamine-Assisted Nanodiamond Coating Zirconia Enhances Zirconia Implant Bioactivity
Phyo Arkar	Taipei Medical University	Carbonate Apatite Scaffold-Based Bone Organoids for Bone Regeneration
Huihua Li	National Dental Centre Singapore, Duke-NUS Medical School	Denture Use Moderates the Impact of Tooth Loss on Cognition
Armelia Widyarman	Faculty of Dentistry, Trisakti University	Salivary Biomarker Assessment Of Tobacco Smoking Effects On Periodontal Health In Lombok People

16. Presentation Abstracts

D01 | ORAL PRESENTATION

- **Presenter Name:** Haksrun Lao
- **Author(s):** Haksrun Lao, Ruslan Isaev, Anand Marya
- **Affiliation(s):** National University, Phnom Penh, Cambodia; University of Puthisastra, Phnom Penh, CAMBODIA
- **Presentation Title:** Prediction of Facial Soft Tissue Thickness from Skeletal Cephalometric Parameters Using Machine Learning: A Cross-Sectional Study in a Cambodian Population
- **Category:** Oral Presentations - Digital Dentistry, Implantology And Prosthodontics
- **Date / Time / Room:** 17 September 2026 | 1:30PM - 1:45PM | Mekong 2 Room

ABSTRACT

Objectives: To develop and evaluate a machine learning model capable of predicting eleven facial soft tissue landmark thickness from skeletal cephalometric parameters (SNA, SNB, ANB), skeletal class, subtype, and sex in a Southeast Asian orthodontic population.

Methods: Lateral cephalometric records of 300 subjects (150 female, 150 male) were analyzed: 100 Skeletal Class I, 100 Class II, and 100 Class III. Each subject was assigned a skeletal subtype based on SNA, SNB, and ANB values. Class II subtypes: Type 1 (retruded mandible: normal SNA, SNB $<78^\circ$, ANB $>4^\circ$), Type 2 (protruded maxilla: SNA $>84^\circ$, normal SNB, ANB $>4^\circ$), and Type 3 (combined: SNA $>84^\circ$, SNB $<78^\circ$, ANB $>4^\circ$). Class III subtypes: Type 1 (maxillary retrusion: SNA $<80^\circ$, normal SNB, ANB $<0^\circ$), Type 2 (mandibular protrusion: normal SNA, SNB $>82^\circ$, ANB $<0^\circ$), and Type 3 (combined). Input variables comprised skeletal class, subtype, sex, SNA, SNB, and ANB. Output variables were eleven facial soft tissue thickness: Glabella, Nasion, Rhinion, Subnasale, Labrale superius, Stomion, Labrale inferius, Labiamentale, Pogonion, Gnathion, and Menton. A machine learning regression model was trained and validated using cross-validation.

Results: Data collection and subtype classification of all 300 subjects have been completed. Model training and validation are currently in progress. Full results, including prediction accuracy metrics and landmark-specific error analysis across skeletal classes and subtypes, will be presented at the conference.

Conclusions: Machine learning has potential as a tool for predicting facial soft tissue thickness from skeletal cephalometric parameters in Cambodian patients. Findings from this study may contribute to improved orthodontic treatment planning and soft tissue outcome prediction across different skeletal classes and subtypes.

D02 | ORAL PRESENTATION

- **Presenter Name:** Saritha Sivarajan
- **Author(s):** Saritha Sivarajan, Yasmin Kamarudin, Zakiah Mat Ripen, Abdullah A. Ahmad Fuaad Boyen Huang, Nor Azlida Mohd Noor
- **Affiliation(s):** Department Of Orthodontics, Paediatric And Special Care Dentistry,, Faculty Of Dentistry, Universiti Malaya, Kuala Lumpur, Malaysia; Department Of Oral & Maxillofacial Clinical Sciences, Faculty Of Dentistry, Universiti Malaya, Kuala Lumpur, Malaysia; Department Of Chemistry, Faculty Of Science, Universiti Malaya, Kuala Lumpur, Malaysia; School Of Dentistry, University Of Minnesota, Minneapolis, Minneapolis, Minnesota, United States; Department Of Community Oral Health & Clinical Prevention, Faculty Of Dentistry, Universiti Malaya, Kuala Lumpur, Malaysia
- **Presentation Title:** Development and Alpha Review of a Web-Based Training Module on Ethical Dental Advertising: A Mixed-Methods Study
- **Category:** Oral Presentations - Digital Dentistry, Implantology And Prosthodontics
- **Date / Time / Room:** 17 September 2026 | 1:45PM - 2:00PM | Mekong 2 Room

ABSTRACT

Objectives: To develop a web-based training module on ethical dental advertising for dentists and to evaluate its acceptability, usability, and educational value using quantitative ratings and qualitative feedback.

Methods: The module was developed by a panel of six experts. Content validation was conducted at different stages of development through written feedback, followed by interviews with various stakeholders. During the alpha review, dentists completed the module and evaluated it using the Website Evaluation Questionnaire (WEQ). This questionnaire evaluated relevance, clarity, comprehensiveness, user-friendliness, structure, navigation, speed, time, and layout, all rated on a 5-point Likert scale from “strongly disagree” (1) to “strongly agree”. To further explore participants’ experiences and perceptions, four focus group discussions were conducted using a semi-structured guide. Quantitative data were summarised descriptively, and qualitative responses were analysed thematically.

Results: Twenty-seven dentists participated in the alpha review (mean age of 36 years, range: 30–44); 70.4% were female, while 29.6% were male. Overall, the module was positively received. All domains of the WEQ scored above 4.0 except for time adequacy, speed, and navigation, which scored 3.87, 3.69, and 2.11, respectively. Thematic analysis of the FGD data generated five main themes: (1) perceived educational value and relevance, (2) comprehensiveness and case-based learning, (3) usability and access barriers, (4) design and cognitive load, and (5) future refinement and wider educational use. Participants viewed the module as relevant to clinical practice and appreciated its comprehensiveness and case-based content but reported difficulties with navigation, mobile compatibility and dense text and recommended improvements in visual design and flow.

Conclusions: The web-based online module was perceived as relevant, comprehensive, and practically useful for ethical dental advertising education. Participants particularly valued the real-life case scenarios and highlighted usability and design issues that should be addressed before wider implementation.

D03 | ORAL PRESENTATION

- **Presenter Name:** Prasad Nalabothu
- **Author(s):** Prasad Nalabothu, Andreas Mueller
- **Affiliation(s):** University of Basel, Basel, SWITZERLAND
- **Presentation Title:** Digital Workflow Performance in Cleft Lip and Palate: Effect of Age, Morphology, and Clinical Setting
- **Category:** Oral Presentations - Digital Dentistry, Implantology And Prosthodontics
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -2:15 PM | Mekong 2 Room

ABSTRACT

Objectives: To characterize intraoral and facial scanning performance across three cleft lip and palate (CLP) centers with distinct workflow configurations, and to identify the primary determinants of scan duration and image acquisition density.

Methods: This STROBE-compliant retrospective multicenter cohort study analyzed 3,279 intraoral and facial scans from 862 patients with non-syndromic CLP across three Asian cleft centers (IRB-approved). Center A performed perioperative scans under general anesthesia by a craniomaxillofacial surgeon; Centers B and C performed chairside scans in awake patients by orthodontists. The cohort included infants (0–12 months, 35.3%), children (1–16 years, 43.1%), and adults (17–35 years, 21.0%). Veau classification III (UCLP) was the most frequent cleft type (58.5%). Scan duration and frame acquisition counts were analyzed by center, scan type, patient age, cleft morphology, operator type, and clinical setting using Kruskal–Wallis and Mann–Whitney U tests with Benjamini–Hochberg correction (significance: $p < 0.001$).

Results: Palate scan duration differed significantly between centers and scan types ($p < 0.001$). Median palate scan duration increased progressively with age: 59 s (IQR 37–91) in infants, 156 s (IQR 114–248) in children, and 190 s (IQR 127–256) in adults. Cleft morphology significantly influenced scan duration ($p < 0.001$), ranging from 79 s (Veau II) to 185 s in orthognathic surgery cases. Bilateral clefts (Veau IV) required median palate scan durations of 135 s (IQR 66–238). Across clinical settings, orthodontist-led chairside workflows achieved palate scan durations of 50 s (IQR 35–67) and 178 s (IQR 123–254), compared to 101 s (IQR 84–127) in the surgeon-led perioperative workflow. Facial scan durations were comparable across all three centers (79–119 s).

Conclusions: Digital intraoral and facial scanning in CLP patients is feasible and efficient regardless of clinical setting or operator background. Scan duration is driven by patient age and cleft morphological complexity, not by workflow or operator type. These findings support intraoral scanning as a universal 3D documentation standard across all CLP care environments and the full multidisciplinary team.

D04 | ORAL PRESENTATION

- **Presenter Name:** Yasmin Kamarudin
- **Author(s):** Yasmin Kamarudin, Saritha Sivarajan, Nor Azlida Mohd Noor, Zakiah Mat Ripen, Abdullah A. Ahmad Fuaad, Boyen Huang
- **Affiliation(S):** S. Sivarajan, N. Mohd Noor, Z. Mat Ripen, A.A. Ahmad Fuaad, Universiti Malaya, Kuala Lumpur, Kuala Lumpur, Malaysia; University of Minnesota School of Dentistry, Minneapolis And Saint Paul, Minnesota, United States
- **Presentation Title:** Perceptions on Social Media Advertising in Dentistry Among Dental Professionals in Malaysia
- **Category:** Oral Presentations - Digital Dentistry, Implantology And Prosthodontics
- **Date / Time / Room:** 17 September 2026 | 2:15PM – 2:30PM | Mekong 2 Room

ABSTRACT

Objectives: Social media advertising by dental professionals is increasingly prominent, raising concerns about ethical standards, professional responsibility and patient protection. The study qualitatively explores Malaysian dental professionals' perceptions of the benefits, risks and ethical challenges of social media advertising in dentistry.

Methods: Four online focus group discussions (FGDs) were conducted via Google Meet with 27 dental professionals recruited through purposive sampling to ensure heterogeneity in gender, age, and type of clinical practice. Each session lasted approximately 60 minutes and was conducted in English involving postgraduate students (n=20), academicians (n=2), dental professionals with research in dental advertising (n=2), a member of the Malaysian Dental Council and one fresh dental graduate. Interviews were audio-recorded, transcribed verbatim and thematically analysed to identify main benefits, disadvantages and challenges related to ethical advertising on social media.

Results: Participants were mainly female (70.4%) with a mean age of 36 years (range 30-44 years). Benefits of social media advertising generated 3 main themes: 1) Competitive Visibility, 2) Patient Awareness and Education, and 3) Consumer Empowerment, whereas disadvantages generated 4 main themes: 1) Commercialisation of Dentistry, 2) Unfair Market Dynamics, 3) Perceived Professional Devaluation, and 4) Professional Discontent. Challenges in adhering to ethical advertising included: 1) Social media Temptation, 2) Platform Volatility, 3) Curriculum Irrelevance, 4) Guidelines Awareness Gap, and 5) Normalisation of Practice.

Conclusions: Dental professionals perceive social media advertising as a double-edged necessity that supports professional visibility, promotes patient awareness, and enables price transparency, yet it also raises concerns about misleading content, compromise of professional image, and ethical challenges. Overall, social media is viewed as both an essential competitive tool and a source of professional tension, reflecting the balance between opportunity and risk in modern dental practice.

D05 | ORAL PRESENTATION

- **Presenter Name:** Norfarizza Khairil Anuar
- **Author(S):** Norfarizza Khairil Anuar, Norashikin Yusof, Raja Nur Adilah Raja Abdul Rahman
- **Affiliation(s):** Clinical Prevention, University Teknologi Mara, Sungai Buloh, Selangor, MALAYSIA
- **Presentation Title:** Navigating the Oral Health Infodemic: Development and Validation of a Questionnaire Assessing Oral Health Misinformation Among Undergraduate Students
- **Category:** Oral Presentations - Digital Dentistry, Implantology And Prosthodontics
- **Date / Time / Room:** 17 September 2026 | 2:30PM – 2:45PM | Mekong 2 Room

ABSTRACT

Objectives: The increasing use of social media for oral health information has contributed to an oral health infodemic, characterized by the rapid spread of misinformation that may influence oral health beliefs and behaviours among young adults. This study aimed to develop and evaluate the validity and reliability of a questionnaire assessing oral health misinformation among undergraduate students.

Methods: A questionnaire was developed through literature review and adaptation of previously validated instruments from Vignesh and Priyadarshini, Liu et al., Alhomsy et al., and BinHamdan et al. The instrument comprised five domains: demographic characteristics, social media use and engagement, self-reported oral health, recognition of oral health misinformation, and perceptions of oral health misinformation. Content validity was assessed by seven experts using the Item Content Validity Index (I-CVI) and Scale Content Validity Index (S-CVI). Face validity was evaluated among 30 undergraduate students using the Item Face Validity Index (I-FVI) and Scale Face Validity Index (S-FVI). Participants accessed the questionnaire through a QR code linked to Google Forms. Internal consistency reliability was assessed in 30 undergraduate students using Cronbach's alpha.

Results: The questionnaire demonstrated good content validity with an I-CVI of 0.96 and an S-CVI of 0.81. Face validity assessment showed good clarity and comprehensibility, with an I-FVI of 0.95 and an S-FVI of 0.75. Cronbach's alpha was 0.90, indicating excellent internal consistency. Expert feedback resulted in revisions to wording, grammar, and double-barrelled items to improve clarity and domain alignment.

Conclusions: The questionnaire demonstrated satisfactory validity and excellent reliability for assessing oral health misinformation among undergraduate students. This instrument may support future research and interventions aimed at improving oral health literacy in the digital environment.

D06 | ORAL PRESENTATION

- **Presenter Name:** Kanchan Chaukiyal
- **Author(s):** Kanchan Chaukiyal, Raghu Raghav Agarwal, Swatantra Agarwal
- **Affiliation(s):** Faculty of Dentistry, University of Puthisastra, Phnom Penh, Phnom Penh, CAMBODIA; College and Research Centre, Moradabad, Uttar Pradesh, INDIA
- **Presentation Title:** Effect of Nanoparticles on Type IV Die Stone Properties
- **Category:** Oral Presentations - Digital Dentistry, Implantology And Prosthodontics
- **Date / Time / Room:** 17 September 2026 | 2:45PM – 3:00PM | Mekong 2 Room

ABSTRACT

Objectives: This in vitro study evaluated the effect of incorporating silica and zirconia nanoparticles at different concentrations on the surface hardness and linear setting expansion of Type IV die stone.

Methods: A total of 150 specimens were fabricated and allocated into five groups (n=30/group): unmodified die stone (control), 1 wt.% silica, 5 wt.% silica, 1 wt.% zirconia, and 5 wt.% zirconia. Fifteen specimens from each group were tested for surface hardness using a Micro-Vickers hardness tester, while the remaining 15 specimens were evaluated for linear setting expansion using an extensometer according to standard testing procedures. Data were analyzed using one-way ANOVA followed by Tukey's post hoc test, with statistical significance set at $p < 0.05$.

Results: Nanoparticle incorporation significantly influenced both properties ($p < 0.01$). Surface hardness increased progressively with nanoparticle addition, with the following order: 5 wt.% zirconia > 1 wt.% zirconia > 5 wt.% silica > 1 wt.% silica > control. Linear setting expansion significantly decreased following nanoparticle incorporation. Mean setting expansion values were 0.108% (control), 0.105% (1 wt.% silica), 0.085% (5 wt.% silica), 0.095% (1 wt.% zirconia), and 0.080% (5 wt.% zirconia), demonstrating the lowest expansion in the 5 wt.% zirconia group. Overall intergroup differences were statistically significant ($p < 0.01$).

Conclusions: The incorporation of silica and zirconia nanoparticles significantly improved the physical and mechanical properties of Type IV die stone by increasing surface hardness and reducing linear setting expansion. Among the tested formulations, 5 wt.% zirconia produced the most favorable combination of high surface hardness and minimal setting expansion, indicating its potential as an effective modifier for improving the clinical performance and dimensional accuracy of dental dies.

D07 | ORAL PRESENTATION

- **Presenter Name:** Hao-Hueng Chang
- **Author(s):** Hao-Hueng Chang, Hsun-Cheng Chang Yung-Te Hou
- **Affiliation(s):** Department of Dentistry, School of Dentistry, College of Medicine, National Taiwan University,, Taipei City, TAIWAN; Department of Dentistry, National Taiwan University Hospital, Taipei City, TAIWAN; Institute of Clinical Dentistry, School of Dentistry,, College of Medicine, National Taiwan University,, Taipei City, TAIWAN; Department of Biomechatronics Engineering,, National Taiwan University,, Taipei City, TAIWAN
- **Presentation Title:** Injectable Photocurable β -TCP/GelMA Hydrogel for Flapless Bone Augmentation
- **Category:** Oral Presentations - Digital Dentistry, Implantology And Prosthodontics
- **Date / Time / Room:** 17 September 2026 | 3.00PM - 3:15PM | Mekong 2 Room

ABSTRACT

Objectives: To develop and evaluate an injectable photocurable β -tricalcium phosphate (β -TCP)/gelatin methacryloyl (GelMA) hydrogel as a minimally invasive strategy for flapless bone augmentation by integrating injectability, in situ photocuring, space maintenance, and osteogenesis.

Methods: Injectable β -TCP/GelMA hydrogels were synthesized and photocured using a dental LED curing unit. Material characterization included X-ray diffraction, Fourier transform infrared spectroscopy, rheological analysis, compressive testing, cytocompatibility, and alkaline phosphatase activity. Following optimization, the selected formulation was evaluated in a rat calvarial subperiosteal augmentation model. Bone regeneration was assessed using micro-computed tomography, histological examination, and immunohistochemical analyses after 4 and 8 weeks.

Results: The optimized β -TCP/GelMA hydrogel demonstrated improved mechanical stability while maintaining excellent cytocompatibility. Compared with GelMA alone, the injectable hydrogel significantly increased bone volume fraction (17.24% vs. 5.87%) and bone mineral density (0.223 vs. 0.166 g/cm³) at 8 weeks ($P < 0.05$). Histological and immunohistochemical analyses confirmed enhanced fibrovascular tissue formation, osteoid deposition, progressive mineralization, and mature bone regeneration. The in situ photocured hydrogel maintained the augmentation space and promoted consistent bone formation throughout the healing process.

Conclusions: Injectable photocurable β -TCP/GelMA hydrogel represents a promising minimally invasive strategy for flapless bone augmentation by combining injectability, rapid photocuring, mechanical space maintenance, and enhanced osteogenesis. These findings support the translational potential of this platform for future alveolar ridge augmentation and implant site development.

D08 | ORAL PRESENTATION

- **Presenter Name:** Phuc Le Hoai
- **Author(s):** Phuc Le Hoai, Hung T. Hoang, Phuong H. Lam
- **Affiliation(s):** University of Medicine, Ho Chi Minh, VIET NAM; University of Medicine and Pharmacy at Ho Chi Minh city, Ho Chi Minh, VIET NAM; University, Ho Chi Minh, VIET NAM
- **Presentation Title:** Six-month follow-up of temporomandibular joint space changes after mandibular reconstruction using patient-specific surgical guides versus the traditional method
- **Category:** Oral Presentations - Digital Dentistry, Implantology And Prosthodontics
- **Date / Time / Room:** 17 September 2026 | 3.15PM - 3:30PM | Mekong 2 Room

ABSTRACT

Objectives: To compare 6-month temporomandibular joint space volume changes after mandibular reconstruction using patient-specific surgical guides and the traditional method.

Methods: This follow-up analysis included 24 participants from a randomized trial who had both preoperative and 6-month postoperative CT scans. Twelve underwent reconstruction using patient-specific surgical guides and 12 using the traditional method. Total, anterior, posterior, medial, and lateral temporomandibular joint space volumes were measured. Two analytical approaches were used: absolute changes on the operated side and occlusion-standardized changes on both sides.

Results: Using the absolute method, both groups showed significant postoperative increases in posterior and lateral joint space volumes on the operated side. In the guide group, posterior volume increased from 531.17 +/- 157.64 mm³ to 733.95 +/- 276.44 mm³ ($p = 0.027$), and lateral volume increased from 430.08 +/- 141.47 mm³ to 571.78 +/- 172.07 mm³ ($p = 0.004$). In the traditional group, posterior volume increased from 611.61 +/- 125.51 mm³ to 868.19 +/- 245.66 mm³ ($p = 0.004$), and lateral volume increased from 526.54 +/- 125.82 mm³ to 674.33 +/- 167.66 mm³ ($p = 0.016$). Using the occlusion-standardized method, the guide group showed a significant increase only in lateral volume on the operated side, whereas the traditional group showed significant increases on the operated side in posterior, lateral, and total volumes and on the non-operated side in anterior volume.

Conclusions: At 6 months, reconstruction using patient-specific surgical guides was associated with fewer occlusion-standardized temporomandibular joint space volume changes than the traditional method, suggesting greater geometric stability of the condyle-fossa relationship.

D09 | ORAL PRESENTATION

- **Presenter Name:** Liyana Mohd Subri
- **Author(S):** Liyana Mohd Subri, Norhasnida Nordin, Wei May Lee, Hayati Ishak, Syed Mohd Zahid Syed Zainal Ariffin
- **Affiliation(s):** Faculty of Dentistry, Universiti Teknologi MARA (UiTM), Sungai Buloh, Selangor, MALAYSIA; Faculty of Computer and Mathematical Sciences (FSKM), Universiti Teknologi MARA (UiTM), Shah Alam, Selangor, MALAYSIA
- **Presentation Title:** Artificial Intelligence for Tooth Wear Assessment: A Scoping Review
- **Category:** Oral Presentations - Digital Dentistry, Implantology And Prosthodontics
- **Date / Time / Room:** 17 September 2026 | 4:00PM - 4:15PM | Mekong 2 Room

ABSTRACT

Objectives: To systematically map existing evidence on the application of artificial intelligence (AI) for tooth wear assessment using dental images.

Methods: A scoping review was conducted following the Joanna Briggs Institute (JBI) methodology and reported according to PRISMA 2020 guidelines. A systematic search was performed across four electronic databases: PubMed/MEDLINE, Scopus, Web of Science, and IEEE Xplore, using standardised search strings combining AI and tooth wear terminology. Records were deduplicated and screened independently using Rayyan AI. Inclusion criteria comprised studies utilising AI or machine learning with dental imaging for tooth wear assessment or grading, published in English with no date restriction. Title/abstract screening and full-text assessment were performed to identify eligible studies. The review protocol was prospectively registered on the Open Science Framework (osf.io/4e7pd).

Results: Database searching identified 342 records. Following removal of 159 duplicates, 183 records were screened. After title/abstract and full-text screening, eight studies met the inclusion criteria. Included studies were conducted across five countries (2016–2025). AI methods included deep learning using convolutional neural networks and vision transformers, classical machine learning, smartphone applications, and image processing techniques. Dental image types included intraoral photographs, panoramic radiographs, ex vivo occlusal photographs, and intraoral scans. Tooth wear indices reported included Modified TWI and BEWE. The most advanced system achieved 93% accuracy in automated TWI grading from intraoral photographs. No included study specifically targeted bruxism patients or utilised standardised intraoral photographs with Modified TWI in a clinical bruxism population.

Conclusions: Evidence on AI-based tooth wear assessment remains limited and heterogeneous. A significant research gap exists for AI applications using standardised intraoral photographs with Modified TWI in bruxism patients, justifying further original research in this area.

D10 | ORAL PRESENTATION

- **Presenter Name:** Sari Kurniawati
- **Author(s):** Sari Kurniawati, Nur Masita Silviana, Dwi Rahmawati
- **Affiliation(s):** Faculty of Dentistry, Universitas Brawijaya, Malang, East Java, INDONESIA
- **Presentation Title:** Assessment of Condylar Height Differences During Orthodontic Treatment Using an Anterior Bite Plane
- **Category:** Oral Presentations - Digital Dentistry, Implantology And Prosthodontics
- **Date / Time / Room:** 17 September 2026 | 4:15PM – 4:30PM | Mekong 2 Room

ABSTRACT

Objectives: This study aims to determine the difference in mandibular condylar height before and after the use of anterior bite plane in orthodontic treatment

Methods: This research is observational analytical research with a design pre-test and post-test. The research sample was measured using the Habets method on panoramic radiography.

Results: On test—paired t-test there was a significant decrease in condylar height after the use of anterior bite plane ($p < 0,05$).

Conclusions: The use of an anterior bite plane can cause a significant decrease in mandibular condylar height on both sides. This change is part of the TMJ's physiological adaptation to the functional changes caused by the appliance

E012 | ORAL PRESENTATION

- **Presenter Name:** Arjun Hari Rijal
- **Author(s):** Arjun H. Rijal, Shaili Pradhan, Waranuch Pitiphat Manoj Humagain
- **Affiliation(s):** Department of Periodontology and Oral Implantology, Kathmandu University School of Medical Sciences, Dhulikhel, NEPAL; Department of Periodontology and Oral Implantology, Kathmandu Medical College and Teaching Hospital, Kathmandu, NEPAL; Division of Dental Public Health, Department of Preventive Dentistry, Khon Kaen University, Khon Kaen, THAILAND
- **Presentation Title:** Comparison of Oral Health Related Quality of Life of the Patients with Chronic Periodontal Disease before and after Nonsurgical Periodontal Therapy
- **Category:** Oral Presentations - Population Oral Health, Epidemiology & Health Services Research
- **Date / Time / Room:** 18 September 2026 | 9:00AM – 9:15AM | Mekong 2 Room

ABSTRACT

Objectives: This project aimed to evaluate the impact of nonsurgical periodontal therapy (NSPT) on oral health-related quality of life (OHRQoL) among patients with gingivitis and periodontitis in a tertiary care setting in Nepal

Methods: A comparative cross-sectional study was conducted among 126 participants (63 gingivitis and 63 periodontitis patients) at Kathmandu University School of Medical Sciences. Baseline demographic and behavioral data were collected, and OHRQoL was assessed using the OHIP-14-PD questionnaire. All participants underwent NSPT: gingivitis patients received supragingival scaling, while periodontitis patients received scaling and root surface debridement. Follow-up assessment was conducted after 4–8 weeks. Data were analyzed using descriptive statistics and inferential tests (Wilcoxon signed-rank test and Mann–Whitney U test), with significance set at $p < 0.05$.

Results: The study demonstrated a significant improvement in OHRQoL following NSPT in both groups. In the gingivitis group, the median OHIP-14 score decreased from 14 (IQR: 2–33) at baseline to 2 (IQR: 0–17) post-treatment ($p=0.000$). Similarly, in the periodontitis group, the median score reduced from 23 (IQR: 4–37) to 4 (IQR: 0–21) ($p=0.000$), indicating statistically significant improvement. Despite these gains, periodontitis patients consistently exhibited poorer OHRQoL compared to gingivitis patients both before and after therapy ($p=0.000$). Improvements were observed across multiple domains, including physical pain, functional limitation, psychological discomfort, and social disability.

Conclusions: The project successfully met its primary objective of evaluating and comparing OHRQoL before and after NSPT in patients with chronic periodontal disease. It demonstrated that NSPT significantly enhances OHRQoL in both gingivitis and periodontitis patients, with greater baseline impairment and residual deficits observed in the latter. The study reinforces the importance of integrating patient-reported outcomes into periodontal care and supports NSPT as an effective intervention for improving both clinical and psychosocial well-being.

E013 | ORAL PRESENTATION

- **Presenter Name:** Izyan Hazwani Baharuddin
- **Author(s):** Izyan Hazwani Baharuddin, Adleena Md Yunos, Ahmad Danial Murad
- **Affiliation(s):** Faculty of Dentistry, Universiti Teknologi MARA, Sungai Buloh, Selangor, MALAYSIA
- **Presentation Title:** Understanding Grit Through Social Networks: An Egocentric Analysis of Dental Students' Support Systems
- **Category:** Oral Presentations - Population Oral Health, Epidemiology & Health Services Research
- **Date / Time / Room:** 18 September 2026 | 9:15AM - 9:30AM | Mekong 2 Room

ABSTRACT

Objectives: Grit is recognised as an important determinant of academic persistence and resilience in dental education. However, previous research has largely conceptualised grit as an individual characteristic, with limited attention to students' interpersonal support networks. This study examined whether egocentric support network characteristics contribute to understanding grit among undergraduate dental students beyond demographic and psychosocial factors.

Methods: A cross-sectional study was conducted among 197 Bachelor of Dental Surgery students at Universiti Teknologi MARA, Malaysia. Participants completed demographic and psychosocial measures, the 8-item Short Grit Scale, and an egocentric social network questionnaire. Using name generator and name interpreter techniques, each participant nominated up to five individuals who provided academic, practical, or emotional support. Network composition and homophily measures were derived for each respondent. Hierarchical linear regression was performed to determine the incremental contribution of network characteristics beyond demographic and psychosocial factors.

Results: Students reported a mean grit score of 3.41 (SD = 0.57) and nominated 408 support ties, averaging two alters per respondent. Friends or peers comprised the largest proportion of nominated alters (48.8%), followed by parents (40.4%), while emotional support received the highest rating (mean = 4.43, SD = 0.80). Incorporating psychosocial variables increased the adjusted R² from 17.6% to 27.3%, and adding egocentric network characteristics further improved model performance to 29.8%. Lower grit was associated with Year 4 status ($\beta = -0.27$, $p = 0.007$), higher perceived stress ($\beta = -0.21$, $p < 0.001$), monthly family interaction ($\beta = -0.30$, $p = 0.024$), and greater gender homophily within support networks ($\beta = -0.31$, $p = 0.006$).

Conclusions: Egocentric support network characteristics provided additional explanatory value beyond demographic and psychosocial factors. These findings suggest that grit should be understood not only as an individual learner characteristic but also as a socially embedded construct shaped by students' support networks. Egocentric social network analysis offers a novel framework for informing learner support and resilience initiatives in dental education.

E014 | ORAL PRESENTATION

- **Presenter Name:** Tuan Le Quang
- **Author(S):** Tuan Le Quang, Hung Hoang Trong, Chanh Le Trung, Trang Tran Thi Thuy, Thi Tran Ngoc Thanh
- **Affiliation(s):** University of Medicine, Ho Chi Minh, VIET NAM
- **Presentation Title:** Self-Assessment of Essential Dental Competencies among Final-Year Dental Students
- **Category:** Oral Presentations - Population Oral Health, Epidemiology & Health Services Research
- **Date / Time / Room:** 18 September 2026 | 9:30AM – 9:45AM | Mekong 2 Room

ABSTRACT

Objectives: To assess self-perceived achievement of essential dental competencies among final-year dental students before graduation and to identify gaps across competency domains.

Methods: A cross-sectional survey was conducted among final-year dental students at Pham Ngoc Thach University of Medicine prior to the graduation examination. Students completed a structured 108-item self-assessment questionnaire based on competencies expected of newly graduating dentists. Items covered five domains: systems thinking and professional readiness, basic dental sciences, preventive and developmental dentistry, restorative dentistry, and oral pathology-surgery. Responses used a five-point Likert scale from poor to excellent. Internal consistency was evaluated at the domain level using Cronbach's alpha. Domain scores were compared using the Friedman test. Principal component analysis was performed on standardized domain scores to explore the underlying competency structure.

Results: Eighty-three students completed the survey. Domain-level Cronbach's alpha ranged from 0.819 to 0.961. Mean scores were below 3.0 in all domains, indicating broad self-perceived competency gaps. The highest score was observed in systems thinking and professional readiness (2.89 ± 0.45), followed by preventive and developmental dentistry (2.59 ± 0.49), basic dental sciences (2.45 ± 0.51), restorative dentistry (2.45 ± 0.53), and oral pathology-surgery (2.38 ± 0.54). Domain differences were significant (Friedman=110.04, $p < 0.001$). PCA identified one dominant component explaining 75.8% of variance, with positive loadings across all domains.

Conclusions: Final-year students reported uneven achievement of essential dental competencies, with the largest self-perceived gaps in technical and procedural clinical domains. Domain-based self-assessment may help guide targeted preparation before graduation.

E015 | ORAL PRESENTATION

- **Presenter Name:** Mi Du
- **Author(s):** Mi Du, John Tay, Marco A. Peres
- **Affiliation(s):** National Dental Centre Singapore, Singapore, SINGAPORE
- **Presentation Title:** Reassessing the association between dental flossing and mortality: quantifying healthy-adherer confounding
- **Category:** Oral Presentations - Population Oral Health, Epidemiology & Health Services Research
- **Date / Time / Room:** 18 September 2026 | 9:45AM – 10:00 AM | Mekong 2 Room

ABSTRACT

Objectives: Observational studies have reported lower all-cause mortality among populations who floss, however, these protective effects may stem from unmeasured healthy-adherer confounding. This study aims to: (i) derive a Healthy-Adherer Reference Value (HARV) to quantify how strongly the health-conscious, care-seeking construct confounds behaviour-mortality associations; and (ii) demonstrate that HARV can discriminate artefactual from genuine effects.

Methods: We analysed a nationally representative sample of adults from the NHANES 2009–2014 linked to National Death Index mortality follow-up through 2019. All-cause mortality was the outcome. Dental flossing frequency was used as the primary test exposure, while smoking status was used as a validation exposure with well-established causal effects on mortality. To construct a composite healthy adherer confounding signal, we fitted separate fully adjusted Cox models, adjusting for smoking status, alcohol consumption, body mass index, diabetes, hypertension, and cardiovascular disease. Log hazard ratios (logHRs) were pooled using random-effects meta-analysis to estimate a composite construct signal. The pooled construct HR was transformed onto the E-value scale to derive HARV. Exposure-specific logHRs were then calibrated by subtracting the pooled construct logHR, with variances combined accordingly. Calibrated HRs and 95% confidence intervals (CIs) were obtained by exponentiation.

Results: The pooled construct HR was 0.720 (95%CI 0.498–0.891), corresponding to a HARV of 2.12 (95%CI 1.49–3.43). For daily/regular flossing (vs. rarely/never), the adjusted HR was 0.739 (95% CI: 0.666–0.819). Following HARV recalibration, the flossing effect shifted to the null (calibrated HR=1.026, 95%CI 0.754–1.397), indicating the original protective effect was attributable to healthy-adherer confounding. In contrast, the mortality association for smoking remained robust after recalibration, with the HR for never smokers shifting from a crude HR of 0.500 (95% CI 0.465–0.638) to a calibrated HR of 0.695 (95%CI 0.515–0.938).

Conclusions: Flossing was observed to have no independent survival benefit after accounting for the shared healthy-adherer construct. The HARV calibration method provides a framework to distinguish spurious confounding signals from genuine effects of health behaviours.

E016 | ORAL PRESENTATION

- **Presenter Name:** Sreylla Phally
- **Author(s):** Sreylla Phally
- **Affiliation(s):** Faculty of Dentistry, University, Phnom Penh, Phnom Penh, CAMBODIA
- **Presentation Title:** A study on the use of flipped classrooms among undergraduate dental students using an online digital platform at University of Puthisastra, Cambodia.
- **Category:** Oral Presentations - Population Oral Health, Epidemiology & Health Services Research
- **Date / Time / Room:** 18 September 2026 | 10:00AM - 10:15AM | Mekong 2 Room

ABSTRACT

Objectives: This study aims to achieve the following

objectives: 1. To identify the level of student's motivation and student's engagement when implementing the flipped classroom in the health sciences private university, at the faculty of dentistry. 2. To find out whether there are any significant differences in students' perception and learning satisfaction with learning strategies toward flipped classrooms at the faculty of dentistry according to the study year and time when implementing the flipped classroom. 3. To provide practical recommendations to the stakeholder and the academic management team with information regarding the utilization of flipped classrooms.

Methods: This research adopts a questionnaire as the tool for data collection. In total, there are four sections for sequential research design that can be used in the mixed methods (Munce et al., 2021). Section 1: Gather potential Participants and Pilot Surveys (Phase I) Section 2: Use results from Phase (I) to build the surveys (implement surveys in Phase II) Section 3: Qualitative data collection and analysis via survey to build the interview (Phase III) Section 4: Merge phase (II) and phase (II) results

Results: The findings from the quantitative online survey revealed that students perceived themselves to be rather highly engaged with flipped learning (n=3.65). Simultaneously, flipped classrooms also required students to employ learning strategies (n=3.50). The results suggest a more modest rating regarding student motivation (n=3.46), learning satisfaction (n=3.44), and student perception (n=3.40). The focus group discussions identified several factors that have interrupted the learning process in flipped classrooms, including students' motivation, engagement, perception, satisfaction, and learning strategy via Moodle.

Conclusions: The findings are supported by studies and literature from the past twenty years, indicating that Cambodian students at the Health Sciences University, the University of Puthisastra have participated voluntarily, sharing their learning experiences, thoughts, current learning practices, and perceptions to minimize issues related to student motivation, engagement, learning satisfaction, and learning strategy towards flipped classrooms sharing learning materials via LMS (Moodle).

E017 | ORAL PRESENTATION

- **Presenter Name:** Ladusingh Rajpurohit
- **Author(s):** Ladusingh Rajpurohit
- **Affiliation(s):** College and Hospital, Pune, Maharashtra, INDIA
- **Presentation Title:** Assessing Dental Public Health Professionals' perception and Barriers on Food Insecurity in India: A Mixed-Method Study
- **Category:** Oral Presentations - Population Oral Health, Epidemiology & Health Services Research
- **Date / Time / Room:** 18 September 2026 | 10:15AM – 10:30AM | Mekong 2 Room

ABSTRACT

Objectives: Food insecurity, our time's most urgent crisis, that exists when people don't have adequate physical, social, or economic access to nutritious food. The 2023 UN FAO report notes 74% of the population unable to afford a healthy diet making monitoring and action, a public health priority. Despite program and initiatives, systems remain disconnected from clinical healthcare. Therefore, This study focuces dental professionals' perceptions, barriers, awareness and preparedness to enhance oral health outcomes tied to food insecurity.

Methods: A mixed method questionnaire study was conducted with dental public health professionals across India to assess perceptions and barriers in addressing food insecurity. Ethical approval was taken from institutional committee. Convenience sampling was done with total sample size of 292. Qualitative data used focus group discussions and quantitative included questionnaire on demographics and its barriers. The questionnaire exhibited internal consistency of cronbach's $\alpha = 0.82$. Face validity for qualitative assessment and content validity for quantitative respectively with CVR= 0.91. The COREQ checklist and STROBE checklist was used for qualitative and quantitative study questionnaire respectively. Quantitative analysis employed SPSS 20 for descriptive statistics and qualitative data through thematic analysis.

Results: Impressively, 80.7% professionals have awareness, with 96% acknowledging its nutrition's impact on dental health. 84% perceive major barriers include insufficient government policies with knowledge gaps. Some think it is outside their purview while some disagree.

Conclusions: Despite dental professionals' strong awareness and its impact on dental health, clinical practice faces major barriers. Some ready to take action, while others deem it outside their role. Findings highlights urgent need for targeted training and policy reforms to empower professionals in addressing this social determinant of oral health.

E018 | ORAL PRESENTATION

- **Presenter Name:** Abhilasha Khanal
- **Author(s):** Abhilasha Khanal, Waranuch Pitiphat
- **Affiliation(s):** University, Khon kaen, THAILAND; National Academy of Medical Sciences, Kathmandu, NEPAL
- **Presentation Title:** Perception of Orthodontic-treatment-need among Nepalese patients and Dentists using IOTN
- **Category:** Oral Presentations - Population Oral Health, Epidemiology & Health Services Research
- **Date / Time / Room:** 18 September 2026 | 11:00AM - 11:15 AM | Mekong 2 Room

ABSTRACT

Objectives: Study aimed to assess agreement in perceived orthodontic-treatment-need between Nepalese patients and dentists, verified through IOTN components and determine the association of dental and patient-perceived variables with orthodontist-rated treatment-need.

Methods: A cross-sectional study conducted at the Department of Dental-Surgery, Bir Hospital, Kathmandu. 396 orthodontic patients were included. Patient-reasons for seeking treatment, dentist assessment and orthodontist evaluation were recorded using a structured questionnaire. IOTN-AC assessed by patients, dentists and orthodontists. DHC assessed clinically by dentists and orthodontists. Weighted Kappa used for agreement, Spearman's correlation was used to examine associations between observer scores, Mann-Whitney U to evaluate associations between perceived dental conditions and orthodontist-rated AC and DHC scores. Statistical significance was set at $p < 0.05$.

Results: Weighted Kappa moderate agreement ($\kappa = 0.59$) between patients and dentists-AC scores, fair agreement ($\kappa = 0.41$) patients and orthodontists, almost perfect agreement ($\kappa = 0.83$) between dentists and orthodontists. Spearman's correlation-agreement in orthodontic-treatment-need was strongest between dentists and orthodontists, patients showed lower alignment with professional assessments. Nepalese patients primarily sought aesthetic Orthodontic care. Standardized IOTN-based assessment may improve patient counselling, referrals and public orthodontic awareness in Nepal. Significant positive correlations between observer groups, with the strongest correlation ($r = 0.84$) between dentist- and orthodontist-rated DHC scores. Patient-perceived deepbite and irregular teeth were significantly associated with higher orthodontist-rated AC scores.

Conclusions: Agreement in orthodontic-treatment need was strongest between dentists and orthodontists, patients showed lower alignment with professional assessments. Nepalese patients primarily sought orthodontic care for aesthetic concerns. Standardized IOTN-based assessment may improve patient counselling, referral decisions, public orthodontic awareness in Nepal.

E019 | ORAL PRESENTATION

- **Presenter Name:** Shilpa Sarawagi
- **Author(s):** Shilpa Sarawagi, Huihua Li, Mi Du, Karla Gambetta-Tessini, Gustavo G. Nascimento, Karen G. Peres
- **Affiliation(s):** National Dental Research Institute Singapore, National Dental Centre Singapore, Singapore, SINGAPORE; Research, Duke-NUS Medical School, Singapore, SINGAPORE; Faculty of Dentistry, University of Talca, Talca, CHILE; School of Dentistry, University of Utah, Salt Lake City, Utah, UNITED STATES
- **Presentation Title:** A Worldwide Analysis of Dental Visits and Early Childhood Caries: Findings from the Global Consortium of Oral Health Birth Cohort Studies (GLOBICS)
- **Category:** Oral Presentations - Population Oral Health, Epidemiology & Health Services Research
- **Date / Time / Room:** 18 September 2026 | 11:15AM - 11:30 AM | Mekong 2 Room

ABSTRACT

Objectives: This study aims (i) to describe the prevalence and factors associated with early dental visits (up to 24 months of age) and (2) to analyse their relationship with the occurrence of early childhood caries (ECC) and severe early childhood caries (S-ECC) across different international cohorts. Additionally, the study explores whether socioeconomic factors, behavioural factors, and systemic fluoride exposure influence this relationship.

Methods: Individual-level, de-identified data from participating OHBCS within the GLOBICS consortium were pooled. The current sample size includes 8,612 children with detailed information on dental visits, caries outcomes, and key covariates. Descriptive analyses examined the prevalence of dental visits within 24 months of age, reasons for visits, and their distribution by socio-demographic factors (family income, maternal education, child sex), behavioural factors (sugar intake, toothbrushing), and caries outcomes (ECC, S-ECC, dmft, dmfs).

Results: Of 8612 children, 9.3% had a dental visit by 24 months of age. Dental visitation rates varied across cohorts, ranging from 2.5% in the BRISA-PN to 51.2% in German Birth Cohort Study. Dental visits were more commonly observed among children from high-income households (12.4% [6.1–23.6] vs 8.4% [4.5–15.3]), regular toothbrushing habits (14.8% [7.2–27.8] vs 8.5% [6.9–10.4]), and high sugar consumption (13.6% [6.4–26.8] vs 11.8% [5.8–22.5]), while proportions were similar by maternal education (7.5% [4.8–11.7] vs 7.8% [6.8–8.9]). Children attending dental visits had a higher proportion of ECC (25.0% [17.3–34.8] vs 15.6% [9.5–24.7]), whereas S-ECC (15.6% [9.5–24.7] vs 12.2% [6.6–21.3]) and overall caries experience (11.8% [5.9–22.1] vs 10.7% [4.8–22.0]) were similar between groups.

Conclusions: Early dental visits remain uncommon worldwide, despite international recommendations. A higher proportion of dental visits was observed among children from higher-income households, and dental visits were associated with a higher proportion of ECC, possibly reflecting reverse causation and residual confounding. These findings highlight gaps in early dental service utilisation and the need for adjusted analyses to clarify causal relationships.

E020 | ORAL PRESENTATION

- **Presenter Name:** Ashish Kalhan
- **Author(s):** Ashish Kalhan, Tosha Kalhan, Rahul Malhotra, Marco A. Peres
- **Affiliation(s):** National Dental Research Institute Singapore, National Dental Centre Singapore, Singapore, SINGAPORE; Research and Population Health Programme, Duke NUS Medical School, Singapore, SINGAPORE; Centre for Ageing Research & Education (CARE), Duke-NUS Medical School, Singapore, SINGAPORE
- **Presentation Title:** Modelling Impact of Smoking Cessation on Tooth Loss in Asians
- **Category:** Oral Presentations - Population Oral Health, Epidemiology & Health Services Research
- **Date / Time / Room:** 18 September 2026 | 11:30AM - 11:45 AM | Mekong 2 Room

ABSTRACT

Objectives: To examine association between life-course smoking burden and tooth loss among older Asian adults, and model clinical and economic impacts of smoking cessation interventions on tooth preservation at population-level.

Methods: Data were obtained from Panel on Health and Ageing of Singaporean Elderly (PHASE), a nationally representative cohort of 4,990 adults aged ≥ 60 years. Life-course smoking burden was assessed using cumulative pack-years and categories defined by intensity (light: <10 cigarettes/day; heavy: ≥ 10 cigarettes/day) and duration (short-/medium-term: <30 years; long-term: ≥ 30 years). Tooth loss was measured across three waves using repeated self-reported measures. Associations were estimated using generalized estimating equations with inverse probability weighting, adjusting for key demographic and time-varying confounders. Robustness to unmeasured confounding was assessed using E-values. Counterfactual modelling simulated guideline-recommended smoking cessation interventions, including behavioral counselling and nicotine replacement therapy (NRT), alone and in combination. Economic evaluation estimated costs per tooth loss averted across smoking burden strata, with sensitivity analyses examining variations in intervention intensity.

Results: Among 4903 participants included (males: 45.2%; current smokers: 11%), higher cumulative smoking exposure was associated with increased risk of tooth loss (relative risk, RR per 10 pack-years: 1.04, 95% CI 1.03–1.05). Combined behavioral counselling and NRT consistently produced the greatest reductions in tooth loss, averting up to 644 tooth loss events (8.8%) in heavy long-term smokers. Behavioral counselling alone was the most economically efficient strategy, with costs ranging from S\$265 to S\$737 per tooth loss averted across the groups. Findings were consistent across sensitivity analyses.

Conclusions: Life-course smoking burden is strongly associated with tooth loss in older Asian adults. Smoking cessation interventions could substantially reduce future tooth loss with combined behavioral counselling and NRT maximizing health gains, while behavioral counselling alone provides the most cost-efficient approach. Targeted cessation strategies based on cumulative smoking exposure may optimize both clinical and economic outcomes in ageing populations.

E021 | ORAL PRESENTATION

- **Presenter Name:** Kalyan Kong
- **Author(s):** Rathkanha KEA, Dariya KUO, Sochenda SOM, Kalyan Kong
- **Affiliation(s):** University of Puthisastra, Phnom Penh, CAMBODIA
- **Presentation Title:** Perception of Undergraduate Dental Student towards Postgraduate Study
- **Category:** Oral Presentations - Population Oral Health, Epidemiology & Health Services Research
- **Date / Time / Room:** 18 September 2026 | 11:45AM - 12:00 PM | Mekong 2 Room

ABSTRACT

Objectives: The objective of this study was to explore dental students' perceptions towards postgraduate study.

Methods: This study is a quantitative cross-sectional survey done on 141 participants using purposive sampling technique. The participants comprised dental students from the University of Puthisastra who had not yet completed their undergraduate studies. The recorded data was written on the questionnaire forms and later entered into Microsoft Excel and SPSS for statistical analysis.

Results: The majority wish to become specialist dentists, with Orthodontics being the most popular postgraduate study choice. Students are driven by a desire to increase knowledge, improve job prospects, and increase income. However, financial constraints, lack of information, and feeling unprepared to undertake postgraduate study are significant barriers. Despite this, many students are willing to pay for postgraduate study without a scholarship and suggest universities should promote postgraduate programs, provide scholarships, and offer more master or diploma courses in Cambodia.

Conclusions: The preferred postgraduate study area is driven by a desire to enhance knowledge, improve employability, and increase earning potential. However, financial constraints, limited information, and feelings of inadequacy for postgraduate study were identified as significant obstacles. Notwithstanding these challenges, undergraduate dental students thought that having many dental specialists is very potential for their country as local patients with serious conditions would not be sent to outside hospitals nearby, and the availability of master's or diploma courses would be beneficial in supporting their academic and professional development. Moreover, having a large number of dentist specialists could increase the health system in Cambodia much better than in previous times.

E022 | ORAL PRESENTATION

- **Presenter Name:** Trieu Hoang
- **Author(s):** Trieu Hoang, Nanthatporn Khamkaew, Nuanphan Maithongdee, Aekapat Laksanacom
- **Affiliation(s):** Faculty of Economics at Sriracha, Kasetsart University, Chon Buri, THAILAND; Academy, Ho Chi Minh, VIET NAM
- **Presentation Title:** Factors Influencing Purchasing Behavior of Orthodontic Products and Equipment Among Dental Professionals in Vietnam
- **Category:** Oral Presentations - Population Oral Health, Epidemiology & Health Services Research
- **Date / Time / Room:** 18 September 2026 | 12:00 PM - 12:15PM | Mekong 2 Room

ABSTRACT

Objectives: To investigate the marketing and technology-related factors influencing the purchasing behavior of orthodontic products and equipment among dental professionals in Vietnam using the 4Ps Marketing Mix and the Technology Acceptance Model (TAM)

Methods: A quantitative cross-sectional survey was conducted among 113 dental professionals attending professional dental events in Vietnam. Data were collected using a structured questionnaire based on the 4Ps Marketing Mix and TAM. Exploratory Factor Analysis (EFA), Cronbach's alpha reliability testing, Pearson correlation analysis, and multiple linear regression were performed using SPSS to identify factors associated with purchase decision behavior

Results: Product quality was the strongest marketing predictor of purchase decision behavior ($\beta = 0.370$, $p < 0.001$), while promotion also demonstrated a significant positive effect ($\beta = 0.249$, $p = 0.040$). Within the Technology Acceptance Model, Perceived Ease of Use was the only significant predictor ($\beta = 0.430$, $p < 0.001$), whereas Perceived Usefulness and Behavioral Intention were not statistically significant. The regression models explained 47.3% and 44.0% of the variance in purchase decision behavior for the 4Ps and TAM models, respectively.

Conclusions: Purchasing decisions for orthodontic products and equipment among Vietnamese dental professionals are primarily influenced by product quality and ease of use rather than price or perceived usefulness. These findings suggest that suppliers should prioritize product quality, user-friendly technologies, and effective promotional strategies to improve adoption and purchasing decisions in the Vietnamese orthodontic market

E023 | ORAL PRESENTATION

- **Presenter Name:** Boriroth Rith
- **Author(s):** Boriroth Rith
- **Affiliation(s):** Hospital, Dung Penh, Phnom Penh, CAMBODIA
- **Presentation Title:** Management Strategies for Trigeminal Neuralgia: A Systematic Review of Pharmacological and Surgical Interventions
- **Category:** Oral Presentations - Population Oral Health, Epidemiology & Health Services Research
- **Date / Time / Room:** 18 September 2026 | 12:15PM - 12:30PM | Mekong 2 Room

ABSTRACT

Objectives: To systematically evaluate the efficacy, durability, recurrence rates, and complication profiles of pharmacological and surgical treatment modalities for trigeminal neuralgia.

Methods: A systematic review was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines. PubMed/MEDLINE, Embase, and the Cochrane Library were searched from database inception to December 2024. Studies evaluating pharmacological therapy, microvascular decompression (MVD), percutaneous ablative procedures, or stereotactic radiosurgery in adult patients with trigeminal neuralgia were included. Primary outcomes were immediate pain relief, long-term pain freedom, and recurrence. Secondary outcomes included treatment-related complications and quality-of-life measures.

Results: Twenty-nine studies involving approximately 6,000 patients met inclusion criteria. Carbamazepine and oxcarbazepine provided effective short-term symptom control but demonstrated limited long-term durability. Among surgical interventions, MVD achieved the highest rates of immediate pain relief and long-term pain freedom with the lowest recurrence rates. Percutaneous procedures demonstrated high initial success but were associated with increased recurrence and sensory morbidity. Stereotactic radiosurgery provided moderate long-term control with minimal perioperative morbidity but delayed onset of pain relief. Outcomes in multiple sclerosis-associated TN were consistently inferior across treatment modalities.

Conclusions: Microvascular decompression remains the preferred surgical option for medically refractory classical trigeminal neuralgia in suitable candidates. Percutaneous and radiosurgical procedures remain valuable alternatives for elderly patients or those with significant comorbidity. Future studies should adopt standardized outcome measures and prospective comparative designs.

E024 | ORAL PRESENTATION

- **Presenter Name:** In meei Tew
- **Author(s):** In meei Tew, Daphne Shu Huey Yeoh, Joyce Wuen Cheer Tay, Tuti Ningseh Mohd Dom, Muhammad Syafiq Asyraf Rosli, Aznida Firzah Abdul Aziz, Haslina Rani
- **Affiliation(s):** Faculty of Dentistry, The National University of Malaysia, Kuala Lumpur, MALAYSIA; Faculty of Medicine, The National University of Malaysia, Kuala Lumpur, MALAYSIA
- **Presentation Title:** Factors Associated with Oral Frailty Among Institutionalized Older Adults
- **Category:** Oral Presentations - Population Oral Health, Epidemiology & Health Services Research
- **Date / Time / Room:** 18 September 2026 | 12:30PM - 12:45PM | Mekong 2 Room

ABSTRACT

Objectives: This study aims to investigate the association between socio-demographic characteristics, comorbidity, dependency level, general frailty, use of dentures and risk of poor oral function among older adults.

Methods: A cross-sectional study involving older adults with 60 years old and above was conducted in a nursing home, Kuala Lumpur. Data on sociodemographic, comorbidity, dependency level, use of dentures, Pictorial Fit-Frail Scale (PFFS) and Oral Frailty Five Item Checklist (OF-5) were collected through individual interview. Risk of oral frailty was categorized into groups with and without risk of poor oral function. Association between variables and risk of oral frailty were analyzed using Chi-square test. Statistical significance was set at $p < 0.05$.

Results: A total of 115 older adults (73 ± 6.8 years old) who met the inclusion criteria were recruited in this study. Most participants with risk of oral frailty were aged between 71-80 years old (44.3%) and were male (54.8%). No significant associations were observed between risk of oral frailty and age ($p = 0.509$), gender ($p = 0.668$), races ($p = 0.246$), educational level ($p = 0.573$), comorbidity status ($p = 0.222$), dependency level ($p = 0.390$) and use of dentures ($p = 0.585$). However, a significant association was found between general frailty and risk of oral frailty ($p = 0.002$), with higher proportions of poor oral function observed among older adults with moderate and severe frailty.

Conclusions: General frailty was significantly associated with risk of poor oral function, highlighting the importance of early frailty identification and intervention in preventing oral frailty.

E025 | ORAL PRESENTATION

- **Presenter Name:** Dr. Chanthya Sieng
- **Author(s):** Chanthya Sieng, Callum Durward, Bathsheba Turton
- **Affiliation(s):** University of Puthisastra, Phnom Penh, CAMBODIA; University, Boston, Massachusetts, UNITED STATES
- **Presentation Title:** Changes in Dental Caries Severity Among Cambodian Schoolchildren Pre- and Post-COVID-19: Evidence from the Healthy Kids Cambodia Program
- **Category:** Oral Presentations - Population Oral Health, Epidemiology & Health Services Research
- **Date / Time / Room:** 18 September 2026 | 12:45PM - 1:00PM | Mekong 2 Room

ABSTRACT

Objectives: To compare pre-pandemic and post-pandemic oral health outcomes of schoolchildren who received dental treatment using the Healthy Kids Index for oral disease (HKI).

Methods: This retrospective comparative study analysed routinely collected data from the Database, in which dentists, dental students, dental nurses, and school nurses report program data, including HKI screening. The analytical sample was restricted to children attending schools that received HKC services in both the pre-pandemic period (June 2018–March 2020) and the post-pandemic period (January 2022–June 2023). Preliminary analysis involved cross-tabulations to examine initial indicators of caries using the HKI by encounter date.

Results: The analysis included 11,172 encounters from 14 schools (6,915 pre-pandemic; 4257 post-pandemic). Pre-pandemic cohorts (mean age 9.8 ± 1.8 years; 51.0% female) and post-pandemic cohorts (mean age 9.5 ± 1.6 years; 51.6% female) were comparable. Post-pandemic screenings showed a significantly higher prevalence of permanent molar cavities (54.3% vs. 37.4%; $p < 0.001$). Differences in permanent anterior cavities (17.1% vs. 14.2%; $p = 0.056$) and active infection (13.2% vs. 16.7%; $p = 0.345$) were not statistically significant.

Conclusions: These preliminary findings indicate a decline in oral health among schoolchildren post-pandemic, primarily characterised by a significant increase in cavitated lesions in permanent molars. These results underscore the utility of the Healthy Kids Index (HKI) as a practical tool for longitudinal disease surveillance in school-based programs. Further multivariate analysis, adjusting for age and geographic and sociodemographic indicators, is ongoing to clarify the impact of pandemic-related disruptions on these oral health outcomes.

R026 | ORAL PRESENTATION

- **Presenter Name:** Zayim Razina Seeni Syed
- **Author(s):** Zayim Razina Seeni Syed, Bee Tin Goh
- **Affiliation(s):** ACP- Research, National Dental Centre Singapore, Singapore, SINGAPORE
- **Presentation Title:** Development and Validation of AeroShield: A Novel Air-Curtain Technology for Aerosol Mitigation in Dentistry Using Clinical Experiments and Computational Fluid Dynamics Simulations
- **Category:** Oral Presentations - Materials, Regeneration And Innovation Research
- **Date / Time / Room:** 18 September 2026 | 2:00PM - 2:15PM | Mekong 2 Room

ABSTRACT

Objectives: To develop AeroShield, a novel air-curtain system that creates an aerodynamic barrier between the patient's oral cavity and dental healthcare personnel, and to evaluate its effectiveness in reducing aerosol contamination of the dentist and dental assistant during aerosol-generating dental procedures.

Methods: A functional AeroShield prototype was developed using a directed-flow air knife mounted on a flexible gooseneck arm attached to a dental chair headrest. When connected to the dental chair's compressed air supply, the device generated a high-velocity air curtain in front of the patient's oral cavity. Clinical experiments were conducted to assess the effectiveness of the air curtain in reducing aerosol contamination. Fluorescent aerosols were generated during simulated dental procedures, and contamination deposition was quantified using filter papers placed on the dentist and dental surgery assistant (DSA). In parallel, Computational Fluid Dynamics (CFD) simulations were performed to model aerosol transport and evaluate the impact of the air curtain on aerosol exposure within the dental operatory.

Results: Both experimental and CFD findings demonstrated the effectiveness of the air-curtain system in reducing aerosol exposure. Clinical experiments showed that implementation of AeroShield reduced the total contaminated area on the dentist and DSA by 39% and 19%, respectively. CFD simulations further predicted reductions in aerosol exposure, with average particle concentration decreases of 22% for the dentist and 35% for the DSA. The air curtain effectively redirected aerosol flow away from vulnerable regions of the DHCP while remaining non-intrusive to clinical procedures.

Conclusions: AeroShield demonstrated significant potential as an engineering control for mitigating aerosol exposure in dental clinics. The agreement between clinical experiments and CFD simulations supports the effectiveness of air-curtain technology in reducing aerosol contamination of dental personnel. This approach may complement existing infection-control measures and enhance occupational safety during aerosol-generating dental procedures, particularly during outbreaks of aerosol-transmissible diseases.

R027 | ORAL PRESENTATION

- **Presenter Name:** Hemant Unadkat
- **Author(s):** Hemant Unadkat
- **Affiliation(s):** National Dental Research Institute Singapore, National Dental Centre Singapore, Singapore, SINGAPORE; Clinical Program, Duke NUS Medical School, Singapore, SINGAPORE
- **Presentation Title:** Explainable AI-Guided Synthetic Membranes Achieve 90% Filling in Guided Bone Regeneration
- **Category:** Oral Presentations - Materials, Regeneration And Innovation Research
- **Date / Time / Room:** 18 September 2026 | 2:15PM - 2:30PM | Mekong 2 Room

ABSTRACT

Objectives: Collagen membranes remain the clinical gold standard for guided bone regeneration (GBR), but they are limited by biological variability, xenogeneic sourcing, and restricted design tunability. We aimed to develop a synthetic, bioresorbable, drug-free, cell-free membrane platform in which surface topography itself provides regenerative instruction for GBR.

Methods: A high-content screening platform was used to evaluate 160 distinct topographies on clinically relevant polymeric substrates. Human oral-regenerative cell responses were assessed using phenotypic assays relevant to tissue repair. Explainable ensemble machine learning was used to identify predictive surface features and rank candidate designs. Two lead topographies were advanced into bioresorbable membrane prototypes, benchmarked against collagen GBR membranes, and validated in a non-human primate oral defect model.

Results: Large-scale screening of 160 topographies identified distinct architecture-dependent regulation of oral-regenerative cell behaviour. Explainable ensemble machine learning enabled selection of two lead membrane designs from the topographical library. In a clinically relevant non-human primate oral defect model, both lead synthetic membranes achieved 90% defect filling at 4 weeks, whereas defects treated with the collagen-based guided bone regeneration membrane, the current clinical gold standard, which is 50% defect fill over the same period. The lead membranes also exhibited favourable tissue compatibility and stable barrier function, supporting their translational potential.

Conclusions: This study establishes a first-in-field, explainable AI-guided pipeline for discovering synthetic bioresorbable GBR membranes. By integrating large-scale topographical screening, interpretable ensemble machine learning, and non-human primate validation, the work demonstrates that rationally engineered synthetic surface architectures can substantially outperform the current collagen membrane gold standard and provides a clinically translatable strategy for next-generation orofacial bone regeneration.

R028 | ORAL PRESENTATION

- **Presenter Name:** Chau Sang Lau
- **Author(s):** Chau Sang Lau, Ethiraj Lalith Prabha, Bee Tin Goh
- **Affiliation(s):** National Dental Centre Singapore, Singapore, SINGAPORE; School, Singapore, SINGAPORE
- **Presentation Title:** Magnesium-Releasing Bioresorbable Composite Scaffolds for Oral-Maxillofacial Bone Regeneration
- **Category:** Oral Presentations - Materials, Regeneration And Innovation Research
- **Date / Time / Room:** 18 September 2026 | 2:30PM - 2:45PM | Mekong 2 Room

ABSTRACT

Objectives: Bone grafts are widely used in oral-maxillofacial surgery for alveolar ridge augmentation, mandibular reconstruction, and cleft repair. Polycaprolactone (PCL)-based scaffolds are promising synthetic alternatives to autogenous, allogenic and xenogenic bone grafts for oral-maxillofacial surgery. However, previous studies demonstrated limited bone formation in defects lacking adjacent bony walls, highlighting the need for improved osteogenic performance. Magnesium (Mg), an essential component of bone, has been shown to enhance osteogenic differentiation and bone regeneration. This study evaluated the biological properties and regenerative potential of a novel PCL-tricalcium phosphate (TCP)-Mg composite scaffold fabricated using a solvent-free process.

Methods: A solvent-free fabrication method was developed to incorporate soluble Mg compounds into PCL-TCP scaffolds, enabling controlled Mg release. Cytocompatibility was assessed using L929 murine fibroblasts and the alamarBlue assay. Osteogenic differentiation was evaluated in human adipose-derived mesenchymal stem cells (hADMSCs) by analysing bone sialoprotein (BSP), osteopontin (OPN), and osteocalcin (OCN) gene expression over four weeks. A pilot in vivo study was conducted in a pig alveolar defect model (n=1), comparing bone regeneration between Mg-containing and control scaffolds.

Results: The alamarBlue assay demonstrated that Mg incorporation did not adversely affect cell viability, confirming the scaffold was non-cytotoxic. Gene expression analysis showed upregulation of BSP, OPN, and OCN between weeks 2 and 4, indicating enhanced osteogenic differentiation of hADMSCs. In the pilot pig study, greater bone formation was observed around Mg-containing scaffolds compared with controls. Histological and radiographic findings suggested improved bone regeneration and scaffold-host bone integration following Mg incorporation.

Conclusions: Mg incorporation into PCL-TCP scaffolds was biocompatible, enhanced osteogenic differentiation in vitro, and promoted bone formation in a pilot animal model. These findings support the potential of PCL-TCP-Mg composite scaffolds as a next-generation biomaterial for oral-maxillofacial bone regeneration. Further studies with larger sample sizes are required to validate these preliminary results.

R029 | ORAL PRESENTATION

- **Presenter Name:** Citra Kusumasari
- **Author(s):** Citra Kusumasari, Regina Vaniabella, Ratna Meidyawati, Winasih Winasih, Iffi Aprillia, Ahmed Abdou
- **Affiliation(s):** Department of Conservative Dentistry, Faculty of Dentistry, Universitas Indonesia, Jakarta Pusat, DKI Jakarta, INDONESIA; Department of Restorative Dentistry, Faculty of Dentistry, Universiti Malaya, Kuala Lumpur, MALAYSIA
- **Presentation Title:** SS-OCT Study Evaluation of Dentin Sealing Using an Enzymatic Smear Layer Deproteinizing Solution
- **Category:** Oral Presentations - Materials, Regeneration And Innovation Research
- **Date / Time / Room:** 18 September 2026 | 2:45PM - 3:00PM | Mekong 2 Room

ABSTRACT

Objectives: This study evaluated the efficacy of high-concentration papain solutions as enzymatic smear layer deproteinizing agents on the sealing ability of composite restorations and the chemical composition modifications of enamel and dentin substrates.

Methods: Tapered cylindrical cavities prepared at the cemento–enamel junction of 40 human premolars were randomly allocated into four pretreatment cohorts (n=10): Control (no deproteinization); 15 IU/g papain solution; 30 IU/g papain solution; and Papacarie Duo gel (positive control). Following pretreatments, cavities were restored using self-etch adhesive systems (Clearfil Universal Bond Quick or Clearfil SE Bond) and a resin composite. Swept Source-Optical Coherence Tomography (SS-OCT) non-destructively quantified cross-sectional interfacial gap length percentages in real-time. Attenuated Total Reflectance-Fourier Transform Infrared Spectroscopy (ATR-FTIR) characterized chemical alterations by calculating the Amide I-to-Phosphate peak ratio to evaluate organic phase elimination efficiency. Data were analyzed using ANOVA and Kruskal-Wallis tests ($\alpha=0.05$).

Results: SS-OCT analysis revealed significant differences in gap formation among groups ($p<0.05$), with the control displaying the highest interfacial gap percentage. Pretreatment with 30 IU/g papain solution significantly minimized gap progression, yielding the lowest gap percentage compared to the control and 15 IU/g papain groups, demonstrating an efficacy comparable to or exceeding Papacarie Duo gel. ATR-FTIR spectra confirmed that papain pretreatments successfully degraded the smear layer's organic matrix, indicated by a notable reduction in the amide I-to-phosphate ratio compared to the untreated control, with the 30 IU/g solution yielding a cleaner, mineral-rich substrate.

Conclusions: Application of a 30 IU/g papain solution as an enzymatic smear layer deproteinizing agent effectively eliminates organic components, improving the sealing ability and interfacial adaptation of resin composite restorations.

R030 | ORAL PRESENTATION

- **Presenter Name:** Thantrira Porntaveetus
- **Author(s):** Thantrira Porntaveetus
- **Affiliation(s):** University, Bangkok, Bangkok, THAILAND
- **Presentation Title:** Beyond RUNX2: Extracellular Matrix Collapse and Prostaglandin Dysregulation Drive Osteogenic Failure in Cleidocranial Dysplasia
- **Category:** Oral Presentations - Materials, Regeneration And Innovation Research
- **Date / Time / Room:** 18 September 2026 | 3:00PM – 3:15PM | Mekong 2 Room

ABSTRACT

Objectives: While RUNX2 variants are the established genetic culprits of Cleidocranial Dysplasia (CCD), the downstream mechanisms causing severe delayed tooth eruption and impaired alveolar bone remodeling remain largely elusive. This study sought to decode the precise transcriptomic landscape of alveolar bone-derived mesenchymal stem cells (aBMSCs) from CCD patients, aiming to uncover the fundamental molecular roadblocks driving their inherent osteogenic failure.

Methods: Primary aBMSCs were harvested from patients harboring pathogenic RUNX2 variants and age-matched healthy controls. Following phenotypic confirmation via flow cytometry, the cells were cultured under both basal and osteogenic conditions. We performed bulk RNA-sequencing on patient-control pairs (n=4) to map global gene expression and pathway shifts. The most critical transcriptomic discoveries were subsequently validated using qRT-PCR in an expanded, independent clinical cohort (n=6).

Results: Transcriptomic profiling uncovered a profoundly compromised extracellular matrix (ECM) network in CCD aBMSCs, driven by a precipitous downregulation of critical structural collagens (COL1A1, COL3A1, COL5A1). Beyond structural deficits, the data revealed major disruptions in G protein-coupled receptor (GPCR) and prostaglandin signaling cascades. When subjected to osteogenic induction, CCD cells exhibited a derailed transcriptional trajectory, confirming a fundamentally blunted differentiation capacity. Crucially, PPP1R12B and PTGER2 emerged as persistent molecular culprits, remaining significantly dysregulated across both basal and induced states, thereby serving as core mediators of the CCD cellular phenotype.

Conclusions: The osteogenic deficit in CCD is driven by profound transcriptomic alterations in ECM organization and critical signaling cascades. These molecular barriers provide a mechanistic explanation for the challenging clinical responses to surgical tooth exposure and orthodontic traction. By identifying PTGER2 and broader ECM dysregulation as key downstream targets, these findings establish a crucial molecular foundation to guide future therapeutic strategies and optimize individualized orthodontic management for CCD patients.

R032 | ORAL PRESENTATION

- **Presenter Name:** Noor Azlin Yahya
- **Author(s):** Noor A. Yahya, Jian Sheng Lee, Azwatee Abdul Aziz, Adrian U. Yap
- **Affiliation(s):** Department of Restorative Dentistry, Faculty of Dentistry, Universiti Malaya, Kuala Lumpur, MALAYSIA; Department of Dentistry, Ng Teng Fong General Hospital, Singapore, SINGAPORE
- **Presentation Title:** Bleaching Effects on Ion-Releasing Restorative Colour Stability
- **Category:** Oral Presentations - Materials, Regeneration And Innovation Research
- **Date / Time / Room:** 18 September 2026 | 4.00 PM-4:15PM | Mekong 2 Room

ABSTRACT

Objectives: To evaluate the effects of bleaching products on the colour stability of ion-releasing restorative materials (IRMs).

Methods: Five IRMs were investigated: bioactive composite (Activa, AB), giomer (Beautifil II LS, BI), alkasite (Cention N, CN), resin-modified glass ionomer (Riva Light Cure, RV), and nanohybrid composite (Luna, LN). Disc-shaped specimens ($n=45/\text{material}$) were fabricated, finished, polished, and stored in artificial saliva for two weeks. Baseline colour was measured using a spectrophotometer (CIELab*). Specimens were randomly assigned ($n=15$) to: artificial saliva (AS, control), take-home bleaching (Pola Night, PN), or in-office bleaching (Pola Rapid, PR). Colour was reassessed at 24 hours (T1), two weeks (T2), and one month (T3). Data were analysed using one-way and two-way ANOVA, and repeated measures ANOVA ($\alpha=0.05$).

Results: Colour change (ΔE^*) ranged from 0.94 ± 0.48 to 5.99 ± 1.33 , primarily driven by increased L^* and decreased b^* values. RV exhibited significantly greater colour change following PN (3.34 ± 0.72) and PR (3.55 ± 0.78) compared with control (1.38 ± 0.68) ($p < 0.05$), with no difference between bleaching agents ($p > 0.05$). At T1, the highest ΔE^* was observed in bleached RV. At T3, AB demonstrated the greatest colour change across all groups (AS: 5.99 ± 1.33 ; PN: 3.80 ± 1.41 ; PR: 4.02 ± 1.31). BI and LN were least affected. No significant temporal changes were observed for most materials, except AB, which showed increased ΔE^* from T1 to T3 ($p < 0.05$).

Conclusions: Bleaching effects on colour stability were material-dependent. Resin-modified glass ionomer was most susceptible to bleaching-induced colour change, while giomer and nanohybrid composite were more stable. Both bleaching systems produced comparable effects. Most IRMs maintained colour stability over time, except the bioactive composite, which showed progressive colour change.

R033 | ORAL PRESENTATION

- **Presenter Name:** Nurabidah Binti Mohamed Shukri
- **Author(S):** Nurabidah Binti Mohamed Shukri, Siti Aisyah B. Roslan, Noorharliana B. Mohamed Zohdi, Nik Rahayyu B. Nik Zulkifeli, Nor Faharina B. Abdul Hamid
- **Affiliation(s):** Centre of Comprehensive Care Studies, Faculty of Dentistry, UiTM, Sungai Buloh, Selangor, MALAYSIA; Centre of Restorative Dentistry Studies, Faculty of Dentistry, UiTM, Sungai Buloh, Selangor, MALAYSIA
- **Presentation Title:** Fracture Resistance of Indirect Restorations: A Bibliometric Analysis of Publication Trends, Research Hotspots, and Collaboration Networks
- **Category:** Oral Presentations - Materials, Regeneration And Innovation Research
- **Date / Time / Room:** 18 September 2026 | 4:15PM – 4:30PM | Mekong 2 Room

ABSTRACT

Objectives: This bibliometric analysis evaluated global research trends regarding the fracture resistance of indirect restorations, drawing upon 1,062 Scopus-indexed publications spanning 2006 to 2025.

Methods: A total of 1,062 Scopus-indexed publications from 2006 to 2025 were retrieved and processed using OpenRefine to standardize author names, journal titles, and keywords. Bibliometric mapping was subsequently performed using VOSviewer to generate keyword co-occurrence, co-authorship, and citation network analyses.

Results: Publication output exhibited steady growth, punctuated by a significant surge after 2015 that culminated in 122 articles by 2025, a trajectory reflecting the widespread integration of CAD/CAM technologies and high-strength ceramics. The United States, Brazil, and Germany were identified as the most prolific nations. Furthermore, an assessment of 160 keywords meeting the minimum co-occurrence threshold identified zirconia, finite element analysis, and lithium disilicate as prominent research themes. Co-authorship analysis revealed the involvement of 36 nations, with the United States, Germany, and Switzerland establishing the most prominent collaborative networks.

Conclusions: These findings demonstrate an evolving academic landscape; while mechanical load-to-failure testing remains a foundational method, the literature is increasingly synthesizing computationally integrated and clinically translational research, bridging these domains to advance the field.

R034 | ORAL PRESENTATION

- **Presenter Name:** Delphine Priscilla Antony
- **Author(s):** Delphine P. Antony, Kashmiri Chowdhury
- **Affiliation(s):** College, Chennai, Tamil Nadu, INDIA
- **Presentation Title:** Nano-Engineered Calcium Hydroxide–Zinc Oxide Intracanal Medicament: Physicochemical Characterization and Biological Evaluation
- **Category:** Oral Presentations - Materials, Regeneration And Innovation Research
- **Date / Time / Room:** 18 September 2026 | 4:30PM - 4:45PM | Mekong 2 Room

ABSTRACT

Objectives: Calcium hydroxide is widely used as an intracanal medicament. This study aimed to develop a novel nano-sized calcium hydroxide–zinc oxide ($n\text{Ca}(\text{OH})_2\text{--ZnO}$) formulation and evaluate its physicochemical characteristics, antimicrobial efficacy, cytocompatibility, dentinal tubule penetration for potential endodontic application.

Methods: Nano-sized calcium hydroxide and zinc oxide particles were synthesized using a sol-gel technique and combined in a 1:1 ratio to obtain the experimental formulation. Physicochemical characterization was performed using Fourier Transform Infrared Spectroscopy (FTIR) and X-Ray Diffraction (XRD). Antimicrobial activity against *Enterococcus faecalis* was assessed using the agar diffusion method. Cytocompatibility was evaluated on periodontal ligament cells using the MTT assay. Dentinal tubule penetration was analyzed by Confocal Laser Scanning Microscopy (CLSM). Triple antibiotic paste (TAP) and conventional calcium hydroxide (RC Cal) served as controls.

Results: FTIR and XRD analyses confirmed successful incorporation of ZnO within the nano-formulation and demonstrated nanoscale crystallite dimensions. The experimental $n\text{Ca}(\text{OH})_2\text{--ZnO}$ formulation exhibited significantly greater antimicrobial activity against *E. faecalis* (13.96 ± 0.84 mm) than conventional calcium hydroxide (9.96 ± 0.84 mm), although lower than TAP (39.96 ± 0.84 mm). Cytocompatibility remained acceptable, with cell viability of $87.00 \pm 1.32\%$, compared with $94.00 \pm 1.32\%$ for RC Cal and $83.00 \pm 1.32\%$ for TAP ($p < 0.001$). CLSM analysis demonstrated enhanced dentinal tubule penetration at coronal, middle, and apical levels. The nano-sized $\text{Ca}(\text{OH})_2\text{--ZnO}$ formulation exhibited effective intratubular diffusion throughout the root canal. Importantly, it was the only tested medicament capable of penetrating dentinal tubules in the apical third, highlighting its potential to improve medicament delivery to anatomically challenging regions of the root canal system.

Conclusions: The novel nano-sized $\text{Ca}(\text{OH})_2\text{--ZnO}$ intracanal medicament demonstrated enhanced antimicrobial activity, acceptable cytocompatibility, superior dentinal tubule penetration. These findings suggest that nano-engineered calcium hydroxide–zinc oxide formulations may represent a promising next-generation intracanal medicament for endodontic disinfection.

M035 | ORAL PRESENTATION

- **Presenter Name:** Kankowan Sriwattanapong
- **Author(s):** Kanokwan Sriwattanapong, Ansaya Pumchan, Patcharaporn Gavila, Thantrira Porntaveetus
- **Affiliation(s):** Center of Excellence in Precision Medicine and Digital Health, Department of Physiology, Faculty of Dentistry, Chulalongkorn University, Bangkok, THAILAND; Centre for Oral Health, Department of Health, Ministry of Public Health, Chiang Mai, THAILAND
- **Presentation Title:** Integrating Proteomic Profiles Across Dental Fluorosis Severities to Identify Homeostatic Disruption
- **Category:** Oral Presentations - Oral Microbiology, Immunology, Genetics And Salivary Research
- **Date / Time / Room:** 18 September 2026 | 2:00PM - 2:15PM | Mekong 3 Room

ABSTRACT

Objectives: Dental fluorosis is a developmental disturbance of dental enamel caused by excessive fluoride ingestion, yet the molecular mechanisms underlying its progression from moderate to severe stages remain poorly understood. This study integrated salivary proteomic profiles from Thai schoolchildren to identify stage-specific signatures and shared pathogenic pathways associated with moderate (MF) and severe (SF) dental fluorosis.

Methods: Salivary samples were analyzed using liquid chromatography-tandem mass spectrometry (LC-MS/MS), supplemented by fluoride concentration measurements in urine and drinking water.

Results: In SF cases, significantly elevated urinary fluoride levels were observed alongside the upregulation of proteins such as LDHA, UBA1, S100A9, H4C3, and LCP1, while immune-related proteins were notably depleted. In contrast, MF cases exhibited a distinct transitional profile characterized by the upregulation of DEFA3, MUC7, and PKM, reflecting early immune activation and altered glycolytic metabolism, while antioxidant defenses (e.g., superoxide dismutase) were compromised. Across both severities, bioinformatic and network topology analyses identified the cystic fibrosis transmembrane conductance regulator (CFTR) as a central hub, suggesting that fluoride-mediated ion transport perturbation is a primary driver of enamel hypomineralization and oral homeostatic disruption.

Conclusions: These findings establish salivary proteomics as a robust, non-invasive platform for monitoring fluorosis progression and provide novel mechanistic insights into the transition from moderate to severe enamel pathology.

M036 | ORAL PRESENTATION

- **Presenter Name:** Preethi Prajod
- **Author(s):** Preethi Prajod, Julian Zuagg Seweryn Bialasiewicz Kok H. Tan, Jaya Seneviratne
- **Affiliation(s):** National Dental Centre Singapore, Singapore, SINGAPORE; School of Dentistry, University of Queensland, Brisbane, Queensland, AUSTRALIA; School of Chemistry and Molecular Biosciences, University of Queensland, Brisbane, Queensland, AUSTRALIA; Department of Maternal & Fetal Medicine, KK Women's and Children's Hospital, Singapore, SINGAPORE
- **Presentation Title:** Multi-OMICS Analysis of Salivary Metagenome, Metabolome, and Epigenome in Gestational Diabetes
- **Category:** Oral Presentations - Oral Microbiology, Immunology, Genetics And Salivary Research
- **Date / Time / Room:** 18 September 2026 | 2:15PM - 2:30PM | Mekong 3 Room

ABSTRACT

Objectives: Gestational diabetes mellitus (GDM) is a prevalent metabolic complication of pregnancy with significant short- and long-term consequences for maternal and offspring health. Saliva represents a promising non-invasive biofluid for biomarker discovery. However, its molecular landscape in GDM remains poorly characterised. Prior salivary studies have largely employed single-omics approaches and inadequately controlled for clinical confounders that critically shape salivary biology. To address these gaps, we conducted a comprehensive multi-omics characterisation of saliva in GDM, integrating shotgun metagenomics, untargeted metabolomics, and DNA methylation profiling, adjusting for key clinical confounders in pregnant women with and without GDM.

Methods: A total of 160 women at 24–34 weeks of gestation were enrolled across partially overlapping cohorts for each omics layer. Metagenomic profiling employed SingleM-guided genome selection with GTDB and HOMD reference databases; metabolomics was performed using UPLC–Q Exactive mass spectrometry, and DNA methylation was assessed by reduced representation bisulfite sequencing (RRBS). All analyses were rigorously adjusted for maternal age, gestational age, BMI, race, and periodontal status.

Results: Following confounder adjustment, salivary molecular profiles were broadly comparable between GDM and healthy pregnancies. Metagenomic analyses revealed conserved microbial diversity, community composition, and functional pathways, with a modest but notable reduction in *Bifidobacterium longum* in GDM. Metabolomic profiling identified no metabolites surviving false discovery rate correction. RRBS detected 273 differentially methylated CpG sites, predominantly in intronic and intergenic regions, indicating subtle epigenomic remodelling in the absence of broad pathway-level disruption.

Conclusions: This rigorously controlled multi-omics study demonstrates that salivary molecular profiles exhibit limited responsiveness to the degree of hyperglycaemia characteristic of GDM at mid-gestation. These findings establish an important evidential benchmark, clarifying the sensitivity and appropriate scope of salivary biomarker discovery in gestational metabolic disease and guiding the design of future studies.

M037 | ORAL PRESENTATION

- **Presenter Name:** Kanistika Jha
- **Author(s):** Kanistika Jha, Manoj Adhikari
- **Affiliation(s):** College of Medical Sciences, Chitwan, Bagmati, NEPAL; Institute of Health Sciences, Kathmandu, NEPAL
- **Presentation Title:** Comparative study of various mouthwashes on gingival index and plaque index in patients with fixed orthodontic treatment.
- **Category:** Oral Presentations - Oral Microbiology, Immunology, Genetics And Salivary Research
- **Date / Time / Room:** 18 September 2026 | 2:30PM - 2:45PM | Mekong 3 Room

ABSTRACT

Objectives: To compare the effectiveness of chlorhexidine and sodium fluoride mouthwashes on plaque index (PI) and gingival index (GI) in patients undergoing fixed orthodontic therapy.

Methods: A quantitative experimental study was conducted among sixty-six patients aged 18–35 years undergoing fixed orthodontic treatment and divided equally into two groups: Group I received chlorhexidine mouthwash and Group II received sodium fluoride mouthwash. Clinical evaluations were performed at baseline, 1 month, and 3 months. Plaque Index (Silness and Loe, 1964) and Gingival Index (Loe and Silness, 1963) were recorded for maxillary anterior teeth. Data were analyzed using SPSS version 21.0 with independent sample t-test and repeated measures ANOVA. A p-value <0.05 was considered statistically significant.

Results: Both groups demonstrated significant reductions in plaque index and gingival index over time ($p < 0.001$). However, the chlorhexidine group showed significantly greater reduction in both PI and GI compared to the sodium fluoride group at 1 month and 3 months ($p < 0.05$). Baseline values between the groups were statistically comparable.

Conclusions: Both chlorhexidine and sodium fluoride mouthwashes improved oral hygiene and gingival health in orthodontic patients. However, chlorhexidine mouthwash was more effective in reducing plaque accumulation and gingival inflammation and may be considered a superior adjunctive oral hygiene aid during fixed orthodontic treatment.

M038 | ORAL PRESENTATION

- **Presenter Name:** Lufei Wang
- **Author(s):** Lufei Wang, Jiahui Tan, Jiajing Tang, Haiqing Liao
- **Affiliation(s):** University, Nanning, Guangxi, CHINA
- **Presentation Title:** Repurposing Dopamine Receptor Agonists: Targeting NAT10 for Periodontal Therapy
- **Category:** Oral Presentations - Oral Microbiology, Immunology, Genetics And Salivary Research
- **Date / Time / Room:** 18 September 2026 | 2:45PM - 3:00PM | Mekong 3 Room

ABSTRACT

Objectives: Anti-inflammatory intervention is critical for restricting tissue damage in periodontitis. Dopamine receptor agonists, widely used for neurological disorders such as Parkinson's disease, exhibit considerable anti-inflammatory properties. Here, we explored their therapeutic potential against periodontal infection and the underlying mechanism, aiming to repurpose these drugs for a new indication.

Methods: Human gingival fibroblasts infected with *Porphyromonas gingivalis* were used to model periodontal inflammation. Molecular docking virtual screening and surface plasmon resonance was conducted to identify potential targets of dopamine receptor agonists. Functional assays, bioinformatic analyses of GEO datasets, and validation experiments were conducted to confirm target involvement and downstream molecular mechanism. Therapeutic efficacy was evaluated in a ligature-induced mouse periodontitis model.

Results: Among these drugs, A68930 significantly reduced bacterial-induced cell damage and inflammatory responses. Mechanistic studies including molecular docking and surface plasmon resonance identified NAT10, an RNA acetyltransferase that catalyzes ac4C mRNA modification, as a novel binding target of A68930. Binding of A68930 to NAT10 inhibited NAT10 enzymatic activity, thereby reducing global ac4C modification. Next, bioinformatic analysis of GEO RNA-seq datasets revealed a strong association between NAT10 and the immune regulatory factor PLCG2. This was validated experimentally through acRIP-qPCR and dual-luciferase assays, which demonstrated that A68930 disrupts NAT10-mediated ac4C modification of PLCG2 mRNA, leading to downregulation of PLCG2. This, in turn, promoted macrophage polarization toward the M2 phenotype and suppressed pro-inflammatory responses. Furthermore, in a ligature-induced mouse model of periodontitis, A68930 effectively prevented periodontal tissue destruction and alveolar bone resorption.

Conclusions: We identify NAT10 as a new target of dopamine receptor agonist A68930 and elucidate a therapeutic mechanism by which targeting NAT10 attenuates periodontal inflammation. This work highlights the promise of drug repurposing and offers innovative therapeutic strategies for periodontitis.

M039 | ORAL PRESENTATION

- **Presenter Name:** Sung-Jin Kim
- **Author(s):** Kisung Nam, Byeong Soo Eom, June Yeon Kim, Moon Geon Lee, Jeong-Min Lee, Kyeongho Lee, Jae-Kook Cha Jin Man Kim, Seunggeun Lee, Sung-Jin Kim
- **Affiliation(s):** National University School of Dentistry, Seoul, KOREA (THE REPUBLIC OF); Graduate School of Data Science, Seoul National University, Seoul, KOREA (THE REPUBLIC OF); University College of Dentistry, Seoul, KOREA (THE REPUBLIC OF)
- **Presentation Title:** A Genomic Atlas of 21 Orofacial Diseases Reveals Shared Genetic Architecture with Systemic Diseases
- **Category:** Oral Presentations - Oral Microbiology, Immunology, Genetics And Salivary Research
- **Date / Time / Room:** 18 September 2026 | 3:00PM – 3:15PM | Mekong 3 Room

ABSTRACT

Objectives: Orofacial diseases are closely linked to systemic health, yet their genetic architecture and biological connections with systemic diseases remain incompletely defined. We aimed to map the genetic landscape of major orofacial diseases and clarify shared molecular pathways underlying oral–systemic disease associations.

Methods: We analyzed 21 orofacial disease phenotypes in the UK Biobank using genome-wide association studies, transcriptome-wide association studies, eQTL-based Mendelian randomization, and exome-wide rare variant association testing. Genetic links with nine systemic diseases were evaluated using Mendelian randomization, genetic correlation, and cross-phenotype association analyses, with replication or validation using FinnGen and functional datasets. For periodontitis, candidate mechanisms were further examined using CRISPR–Cas9 prime editing, in vitro translation assays, single-cell RNA sequencing of gingival tissues, immunofluorescence staining, and gingival crevicular fluid analysis.

Results: Across 21 orofacial diseases, we identified 48 novel loci and prioritized 160 putative causal genes. Rare variant analysis identified ALDH1A2 as a periodontitis-associated gene, driven by a synonymous variant, rs16939660. Functional editing showed that this variant reduced ALDH1A2 protein production without altering mRNA levels, consistent with impaired translational efficiency. In human periodontitis tissues, ALDH1A2 expression was reduced in endothelial cells, accompanied by decreased retinoic acid levels in gingival crevicular fluid and a T helper 17–skewed immune phenotype. Genetically informed analyses further supported systemic relevance of orofacial diseases, including consistent effects of Sjögren’s syndrome on lung cancer and stroke risk, while dental caries and periodontitis showed substantial shared genetic architecture with systemic diseases, enriched for nicotine-related and neuroimmune pathways.

Conclusions: This integrative genomic study provides a broad atlas of orofacial disease susceptibility, identifies ALDH1A2-mediated retinoic acid signaling as a functional pathway in periodontitis, and highlights shared genetic mechanisms linking oral and systemic health.

M040 | ORAL PRESENTATION

- **Presenter Name:** Siti Zulaikha Mohd Nasir
- **Author(s):** Siti Zulaikha Mohd Nasir, Hayati Ishak, Ikmal Hisham Ismail, Wan Nur Farhana Wan Abdul Rahman, Hamidah Idris Mohd Fakharul Zaman Raja Yahya
- **Affiliation(s):** Faculty of Dentistry, Universiti Teknologi MARA, Sungai Buloh, Selangor, MALAYSIA; Centre of Studies, Universiti Teknologi MARA, Sungai Buloh, Selangor, MALAYSIA; Faculty of Science and Mathematics, Universiti Pendidikan Sultan Idris, Tanjong Malim, Perak, MALAYSIA; Faculty of Applied Sciences, Universiti Teknologi MARA, Shah Alam, Selangor, MALAYSIA
- **Presentation Title:** Comparative Antimicrobial Activity of Palmitic Acid, Tocotrienol, Their Combination, and Sodium Fluoride Against Streptococcus mutans: A Preliminary Study
- **Category:** Oral Presentations - Oral Microbiology, Immunology, Genetics And Salivary Research
- **Date / Time / Room:** 18 September 2026 | 3:15PM – 3:30PM | Mekong 3 Room

ABSTRACT

Objectives: To compare the antimicrobial activities of palmitic acid (PA), tocotrienol (TN), their combination (PATN), and sodium fluoride (NaF) against Streptococcus mutans

Methods: Antimicrobial activity was evaluated using the broth microdilution method with a resazurin viability assay. Experiments were performed in triplicate using 96-well plates. Each well contained 100 μ L of the test solution and 100 μ L of S. mutans inoculum (OD600 = 0.08–0.10). NaF served as the positive control, while 2.5% ethanol in brain heart infusion broth served as the negative control. PA, TN, PATN, and NaF were tested at concentrations ranging from 3.2 to 0.025 mg/mL using two-fold serial dilutions.

Results: NaF demonstrated the strongest and most consistent antimicrobial activity, achieving 71.5%–78.8% inhibition at concentrations of 0.4–3.2 mg/mL. PA and PATN exhibited concentration-dependent inhibition but were less effective than NaF at concentrations $\leq$ 0.8 mg/mL. TN alone showed minimal antimicrobial activity across all concentrations. Resazurin assay findings supported these results, with NaF maintaining a blue colour at the highest concentrations, whereas PA, TN, and PATN showed purple-to-pink colour changes, indicating greater bacterial viability.

Conclusions: NaF exhibited superior antimicrobial activity against S. mutans. PA and PATN demonstrated concentration-dependent effects but lower efficacy than NaF, while TN alone showed limited activity. Further studies using complementary antimicrobial assays are warranted to validate these preliminary findings.

M041 | ORAL PRESENTATION

- **Presenter Name:** Zainab Akram
- **Author(s):** Zainab Akram
- **Affiliation(s):** AIIMS New Delhi, Delhi, Delhi, INDIA
- **Presentation Title:** Impact of Chemotherapy on Oral Microbiome Dysbiosis and Mucositis: A Systematic Review and Meta Analysis
- **Category:** Oral Presentations - Oral Microbiology, Immunology, Genetics And Salivary Research
- **Date / Time / Room:** 18 September 2026 | 3:30PM – 3:45PM | Mekong 3 Room

ABSTRACT

Objectives: To systematically evaluate pooled prevalence of the oral microbiome in patients undergoing chemotherapy or chemoradiotherapy, along with mucositis and salivary flow rate.

Methods: A comprehensive literature search, screening and application of eligibility criteria leads to the selection of 37 articles from the electronic databases PubMed, Cochrane Library, Embase, Google Scholar and Web of Science. Data extraction and quality assessment of each study was conducted. Quantitative analysis was conducted using R software.

Results: The pooled prevalence of oral Candida colonization came out to be 39%, Staphylococcus 31% and HSV is 9%, using random effect model, with high heterogeneity. Sensitivity and sub group analysis were performed. The mucositis prevalence found to be 67% and Salivary flow rate is 0.48 ml/min.

Conclusions: These findings highlight the important relationship between cancer therapy, oral microbial imbalance, and oral complications. Early monitoring and preventive oral care strategies may help reduce treatment-related oral complications and improve patient outcomes.

P01 | POSTER PRESENTATION

- **Presenter Name:** Gia Hien Phan
- **Author(s):** Gia Hien Phan, Tri Dung Nguyen, Huu Thuc Hien Huynh
- **Affiliation(s):** University of Medicine and Pharmacy at HCMC, Ho Chi Minh City, VIET NAM
- **Presentation Title:** Dental Erosion In Patients With Gastroesophageal Reflux Disease: A Cross-Sectional Study
- **Category:** Hatton Junior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: This study was conducted to determine the status of dental erosion in patients with GERD at the outpatient clinic of Binh Dan Hospital, Ho Chi Minh City.

Methods: A descriptive cross-sectional study was conducted on 203 patients with GERD at the Outpatient Department of Binh Dan Hospital between June and October 2025. Patients who were examined by gastroenterologists, diagnosed with GERD and underwent esophagogastrosocopy, were oral evaluated for dental erosion using the Basic Erosive Wear Examination (BEWE) index.

Results: There were 203 patients (91 males, 112 females) ranging from 18 to 92 years old. Among them, 118 cases (58.1%) had no esophageal lesions observable via endoscopy, 80 cases (39.4%) had grade A esophageal lesions, 4 cases (2.0%) were grade B, and 1 case (0.5%) was grade C according to The Los Angeles Classification. The prevalence of patients with dental erosion was 94.5%; of which mild erosion accounted for 40.8%, moderate erosion 41.4%, and severe erosion 12.3%. There were differences in the severity of dental erosion by gender or age ($p < 0.001$). Differences in dental erosion severity were observed among tooth regions, with posterior teeth in both arches exhibiting greater severity than anterior teeth. Within the same arch, the first premolars had a higher rate of erosion than other teeth ($p < 0.001$), but the first molars had the most serious level of wear ($p < 0.001$, Bonferroni post-hoc $\alpha = 0.01$). On the same tooth, the occlusal or incisal surfaces were more seriously eroded compared to the buccal and lingual surfaces ($p < 0.001$).

Conclusions: Dental erosion is prevalent and severe in patients with gastroesophageal reflux disease. There is a need for interdisciplinary collaboration between Gastroenterology and Odonto- Stomatology for the detection, intervention, and prevention of dental erosion in this patient group

P02 | POSTER PRESENTATION

- **Presenter Name:** Hoang Kim Luong
- **Author(s):** Hoang Kim Luong, Uyen Nguyen, Dong Q. Dinh, Phuoc H. Huynh, Hung Hoang Trong
- **Affiliation(s):** Faculty of Dentistry, University of Medicine and Pharmacy at Ho Chi Minh City, Ho Chi Minh City, VIET NAM; Faculty of Dentistry, Pham Ngoc Thach University of Medicine, Ho Chi Minh City, VIET NAM
- **Presentation Title:** Dentist–Patient Gaps in Diabetes–Oral Health Awareness and Integrated Care
- **Category:** Hatton Junior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: To assess dentist–patient gaps in awareness, interprofessional collaboration, and care practices related to the diabetes–oral health relationship.

Methods: This cross-sectional comparative study included 172 dentists and 205 dental patients. Two parallel validated 40-item Likert-scale questionnaires were used. Each item was scored from 0 to 4, yielding a total score of 160 across five domains: diabetes knowledge (36 points), oral health knowledge/management (52 points), oral–diabetes relationship awareness (36 points), interprofessional collaboration (12 points), and practice attitude/self-care behaviours (24 points). Descriptive statistics, comparative analyses, and principal component analysis (PCA) were performed to examine dentist–patient gaps.

Results: The mean total score was 131.45 ± 24.35 for dentists and 59.14 ± 27.29 for dental patients ($p < 0.001$). Dentist–patient gaps were observed in diabetes knowledge (31.30 ± 5.63 vs 15.51 ± 8.15), oral health knowledge/management (43.49 ± 8.29 vs 24.27 ± 10.92), oral–diabetes relationship awareness (29.03 ± 6.51 vs 7.02 ± 8.07), interprofessional collaboration (8.94 ± 2.68 vs 1.05 ± 2.12), and practice/self-care behaviours (18.69 ± 4.48 vs 11.29 ± 4.66). The largest gap was found in interprofessional collaboration and oral–diabetes relationship awareness. PCA showed that PC1 explained 83.52% and PC2 explained 6.09% of the variance, with dentists and patients clustering on opposite sides of PC1, indicating a marked multidimensional gap.

Conclusions: Dentist–patient gaps may exist in diabetes–oral health awareness and integrated care. Strengthening patient education, chairside counselling, referral pathways, and dental–medical collaboration may help bridge these gaps.

P03 | POSTER PRESENTATION

- **Presenter Name:** Uyen Nguyen
- **Author(s):** Uyen Nguyen, Hoang Kim Luong, Dong Q. Dinh, Phuoc H. Huynh, Hung Hoang Trong
- **Affiliation(s):** Faculty of Dentistry, University of Medicine and Pharmacy at Ho Chi Minh City, Ho Chi Minh City, VIET NAM; Faculty of Dentistry, Pham Ngoc Thach University of Medicine, Ho Chi Minh City, VIET NAM
- **Presentation Title:** Physician–Patient Gaps in Oral Health Integration into Diabetes Care
- **Category:** Hatton Junior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: To assess physician–patient gaps in oral health awareness, referral experiences, interprofessional collaboration, and self-care practices within diabetes care.

Methods: This cross-sectional comparative study included 101 internal medicine physicians and 215 patients with diabetes. Two parallel validated 40-item Likert-scale questionnaires were used. Items were scored from 0 to 4, yielding a total score of 160 across five domains: diabetes care knowledge/practice (36 points), oral health knowledge (52 points), oral–diabetes relationship awareness (36 points), interprofessional collaboration (12 points), and practice/attitude or self-care behaviours (24 points). Descriptive statistics, group comparisons, and principal component analysis (PCA) were performed to identify domain-specific and multidimensional physician–patient gaps.

Results: The mean total score was 130.07 ± 18.30 for internal medicine physicians and 68.69 ± 28.12 for patients with diabetes ($p < 0.001$). Gaps were observed in diabetes care knowledge/practice (32.42 ± 4.02 vs 22.11 ± 7.84), oral health knowledge (44.33 ± 6.60 vs 23.88 ± 11.48), oral–diabetes relationship awareness (27.17 ± 5.98 vs 7.94 ± 8.16), interprofessional collaboration (7.64 ± 2.56 vs 1.61 ± 2.52), and practice/self-care behaviours (18.52 ± 3.68 vs 13.14 ± 4.60). The largest gap was in oral–diabetes relationship awareness. PCA showed that PC1 explained 76.40% and PC2 explained 9.71% of the variance, with physicians and patients clustering in distinct regions, indicating a substantial multidimensional gap.

Conclusions: Physician–patient gaps may limit oral health integration in diabetes care and hinder comprehensive diabetes management. Embedding routine oral health counselling, structured dental referral pathways, and stronger dental–medical collaboration into diabetes management may improve comprehensive care.

P05 | POSTER PRESENTATION

- **Presenter Name:** Aphireak Sokna
- **Author(s):** Aphireak Sokna
- **Affiliation(s):** University of Puthisastra, Phnom Penh, CAMBODIA
- **Presentation Title:** General and Specific Personality Traits Predict Academic and Clinical Performance Among Cambodian Dental Students
- **Category:** Hatton Junior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: The significance of personality traits as one of the non-cognitive variables which could affect the academic success and clinical competencies of students is known. Nevertheless, there is little data about the effect of the relationship between such personality traits and achievement of Cambodian dental students. This research study was conducted to assess the relationship between the Big Five personality traits and academic and clinical achievements of undergraduate dental students in the University of Puthisastra.

Methods: Quantitative cross-sectional research was done on 102 undergraduate dental students of year 4-6 from the University of Puthisastra. Students answered 50 questions of International Personality Item Pool (IPIP) Big Five questionnaire. Academic achievement was measured by grade point average (GPA), and clinical performance was measured using the score of clinical requirements.

Results: Of the 102 participants included in the analysis, 53% were males and 47% were females. Males had significantly higher mean scores in extraversion ($P = 0.039$), emotional stability ($P = 0.021$), and intellect/imagination ($P = 0.026$). There were no significant differences in the distribution of the personality traits according to the study year. The multiple linear regression found extraversion to be the only significant predictor of GPA, showing a small negative association ($\beta = -0.027$, $P = 0.049$). None of the five big personality traits was found to predict the clinical performance significantly. However, extraversion ($\beta = 0.537$), conscientiousness ($\beta = 0.777$), and intellect/imagination ($\beta = 0.133$) had positive associations with the clinical score, while agreeableness ($\beta = -0.673$) and emotional stability ($\beta = -1.159$) had negative associations.

Conclusions: Personality traits have different contributions in academic and clinical performance of Cambodian dental students. Extraversion had a negative association with academic success, but a positive association with the clinical performance. While none of the personality traits predicted the clinical performance significantly, both conscientiousness and intellect/imagination had positive associations with it. The results obtained can help to enrich current programs of student assessment and support in dental education.

P06 | POSTER PRESENTATION

- **Presenter Name:** Viet Hoang
- **Author(s):** Viet Hoang, Nattapon Chantarapanich, Samroeng Inglam, Anand Marya
- **Affiliation(s):** University, Sriracha, Chonburi, THAILAND; Faculty of Dentistry, Thammasat University, Rangsit, THAILAND; Faculty of Dentistry, University of Puthisastra, Phnom Penh, CAMBODIA
- **Presentation Title:** Comparative Biomechanical Efficacy of Semi-Customized Marpe Devices with Bone-Borne and Tooth-Bone-Borne Designs in Different Maxillary Positions and Screws Configuration
- **Category:** Hatton Senior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: Compare the biomechanical performance of semi-customized BB and TBB MARPE designs. Determine the optimal appliance position and mini-screw configuration for maximizing skeletal expansion while minimizing stress on the appliance, bone, teeth, and periodontal structures.

Methods: A total of 18 finite element (FE) models representing anterior, middle, and posterior Bone-Borne (BB) and Tooth-Bone-Borne (TBB) MARPE designs with 2, 4, or 6 mini screws were constructed from a CBCT-based maxillary model. All materials were assumed to be homogeneous, isotropic, and linearly elastic. A standardized 0.16-mm expansion was simulated under fixed boundary conditions using MSC Marc®. Von Mises stress of the MARPE appliance and mini screws, principal stress of the cortical bone, cancellous bone, teeth, and periodontal ligament (PDL), skeletal displacement, and the PNS/ANS ratio were evaluated to compare biomechanical performance and expansion patterns.

Results: MARPE: Stress increased from anterior to posterior, with TBB showing higher stress than BB. Mini screws: Stress was concentrated at the cervical cortical interface. Six-screw designs improved load distribution, while screws 5/6 showed the highest stress. Teeth and PDL: BB produced negligible dentoalveolar stress, whereas TBB generated markedly higher stress, especially in anterior and middle positions. Expansion pattern: Anterior positioning produced V-shaped expansion, middle positioning produced near-parallel expansion, and posterior positioning produced reverse V-shaped expansion.

Conclusions: BB MARPE achieved comparable skeletal expansion with substantially lower dentoalveolar stress than TBB, making it preferable for maximizing skeletal effects. Middle positioning provided the most favorable biomechanical performance with near-parallel expansion and moderate stress, whereas anterior produced V-shaped expansion and posterior generated the highest stress with reverse V-shaped expansion. Increasing the number of mini screws improved load distribution. The four-screw design offered the best balance between biomechanical performance and clinical practicality, while six screws provided only limited additional benefit.

P07 | POSTER PRESENTATION

- **Presenter Name:** Aiemeeza Rajali
- **Author(s):** Aiemeeza Rajali, Nik Noor Idayu Nik Ibrahim, Siti Mariam Ab Ghani, Solehuddin Shuib Rohana Ahmad
- **Affiliation(s):** Faculty of Dentistry, Universiti Teknologi MARA (UiTM), Sg Buloh, Selangor, MALAYSIA; Faculty of Applied Science, Universiti Teknologi MARA (UiTM), Shah Alam, Selangor, MALAYSIA; Faculty of Mechanical Engineering, Universiti Teknologi MARA (UiTM), Shah Alam, Selangor, MALAYSIA
- **Presentation Title:** Effects of Printing Parameters on the Mechanical Properties of 3D-Printed Flexible Denture Resins before and after Thermocycling.
- **Category:** Hatton Senior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: This study aimed to evaluate the influence of printing parameters: build orientation, layer thickness, and support structure on the strength and hardness of a 3D-printed flexible denture resin before and after thermocycling.

Methods: A total of 144 specimens from each 3D-printed denture resin (one rigid-Graphy Resin THD and two flexible resins-Graphy Resin TFDH and 3Dresyn OD FDB) were printed at different dimensions based on the mechanical test performed. Specimens were printed using an LCD-SLA 3D printer at different build orientations (30°, 40°, and 45°), layer thicknesses (50 µm and 100 µm), and with partial or full support structures. Half of the samples were subjected to thermocycling (5,000 cycles, 5–55°C) to simulate thermo-aging. Flexural strength, tensile strength, and Vickers hardness were assessed using a three-point bending test, a universal testing machine, and a microhardness tester, respectively. Data were analyzed using one-way ANOVA followed by Tukey's post hoc test ($\alpha = 0.05$).

Results: Specimens printed at 45° orientation with 50 µm layer thickness and full support exhibited the highest flexural and tensile strength values, while those printed at 30° with 100 µm and partial support showed the lowest. However, there is no significant difference between groups printed at different orientations. Thermocycling significantly reduced both flexural and tensile strength across all groups ($p < 0.05$). Vickers hardness significantly decreased in the 3D-printed flexible denture resins after thermocycling ($p < 0.05$).

Conclusions: Thermocycling significantly negatively affects the flexural strength, tensile strength, and hardness of 3D-printed flexible denture resins. Optimized printing parameters will produce superior mechanical properties both before and after thermocycling.

P08 | POSTER PRESENTATION

- **Presenter Name:** Sharon Tan
- **Author(s):** Sharon Tan, Jennifer E. Gallagher, Stefan Listl Xiaoli Gao
- **Affiliation(s):** National University of Singapore, Singapore, SINGAPORE; College London, London, UNITED KINGDOM; University, Heidelberg, GERMANY
- **Presentation Title:** Financial Incentives to Encourage Dental Care Utilisation: An Explanatory Sequential Mixed-Methods Study
- **Category:** Hatton Senior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: Although financial incentives have been shown to increase short-term dental utilisation, there is little evidence of their longer-term effects, and how they influence decision-making processes. This study examines the role and impact of financial incentives on dental care utilisation over 18 months.

Methods: A total of 1,381 adults from the Singapore Population Health Study participated in a five-arm experimental study, where each group was offered a once-off rebate (SGD \$10-\$50) for visiting a dental professional over a 6-month period. The effect of the rebate offer on dental utilisation after 18 months was assessed through a follow-up questionnaire, using modified Poisson regression analysis. Qualitative data were collected from online semi-structured interviews of a purposive sample of 40 participants, and analysed inductively using thematic analysis. (NUS-IRB 2023-49)

Results: A follow-up survey response of 67.3% (n=930) was achieved. Although \$30 and \$50 rebates were associated with a higher prevalence of reporting a dental visit initially, particularly for irregular attendees, middle-aged adults, and individuals from lower socioeconomic groups, there was no clear evidence of differences in dental utilisation across the five arms over 18 months. Individuals who uploaded their receipt initially were more likely to report a follow-up visit. Three main themes were identified: (1) Once-off financial incentives function as extrinsic motivation with limited effect on intrinsic motivation. They can encourage individuals to increase dental visit frequency, pursue elective dental care, and seek dental care locally in the short-term; (2) Incentive quantum is important for disadvantaged groups who face higher opportunity costs and marginal utility of money; and (3) Financial rebates conditional on uploading receipts as proof of visits may be limited by administrative burdens, technical challenges and privacy concerns.

Conclusions: Variations in one-time financial rebates showed no sustained effects over 18 months. Heterogeneity in responses was observed by past dental visiting patterns, age and socioeconomic status.

P09 | POSTER PRESENTATION

- **Presenter Name:** John Tay
- **Author(s):** John Tay, Robin Blythe, Huihua Li, Philip M. Preshaw
- **Affiliation(s):** School, Singapore, SINGAPORE; National Dental Centre Singapore, Singapore, SINGAPORE; School of Dental Sciences, Newcastle University, Newcastle upon Tyne, UNITED KINGDOM
- **Presentation Title:** Tooth Retention and Disease Activity over a 30-Year Horizon of Periodontal Maintenance: A Longitudinal Multistate Life-Table Analysis
- **Category:** Hatton Senior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: To express tooth-level prognosis as the expected years a tooth is retained and the proportion of that time spent disease-controlled versus pocketed, and to quantify how these diverge between molars and non-molars across a 30-year horizon. A secondary aim assessed whether persistent bleeding on probing (BOP) is associated with reduced retention.

Methods: A retrospective cohort of 121 patients (2,979 teeth, 720 molars) underwent six-site charting at baseline, one year and five years. Each tooth was classified as Controlled, Pocketed (probing depth ≥ 5 mm) or Extracted (absorbing); annual transition probabilities were modelled by patient-clustered multinomial logistic regression conditioning on prior state, tooth type and clinical covariates. These were propagated over 30 years within a multistate life-table microsimulation of 100,000 tooth trajectories, yielding tooth-retention life expectancy and time in each state. Bias-corrected and accelerated (BCa) 95% confidence intervals came from 1,000 patient-clustered bootstrap replicates.

Results: Tooth type was the principal determinant of prognosis. A non-molar entering maintenance disease-controlled had a tooth-retention life expectancy of 28.9 years (95% CI 27.0–29.7) and remained controlled for 94.1% of its retained lifetime; the corresponding molar reached only 22.5 years (17.2–25.7), controlled for 60.6% of the time. This molar–non-molar gap of 6.4 years (3.4–10.9) far exceeded the difference attributable to starting state. The disparity reflected disease reversibility: a pocketed non-molar regained control in 60.9% of years, against only 22.8% for molars. Higher tooth-level BOP was independently associated with Controlled-to-Pocketed progression (OR 1.55, 1.22–1.97), though modest beside tooth type.

Conclusions: Long-term periodontal prognosis is unequal across the dentition. Molars are retained six to seven fewer years than non-molars, spend more of their lifetime pocketed, and recover disease control less than half as often — an asymmetry obscured by conventional survival analysis. Expressed in years rather than hazards, these estimates support closer monitoring of molars and an interpretable basis for prognostic counselling.

P10 | POSTER PRESENTATION

- **Presenter Name:** Toan Van Phan
- **Author(s):** Toan V. Phan, Chau Lam Buu, Yeo-Jun Yoon, Jae-Yol Lim, Joao N. Ferreira
- **Affiliation(s):** Faculty of Dentistry, Chulalongkorn University, Bangkok, THAILAND; College of Medicine, Yonsei University, Seoul, KOREA (THE REPUBLIC OF)
- **Presentation Title:** Novel Salivary Gland-Oral Mucosa Multiorgan-on-chip Unveils an Organ Crosstalk leading to Oral Mucositis Alleviation
- **Category:** Hatton Senior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: This study aimed to develop a novel SG-OM multiorgan-on-a-chip (multi-OoC) platform to model the impact of SG on OM after fractionated irradiation.

Methods: A full-thickness oral mucosa equivalent (OME) was fabricated at air-liquid interface using an OM-derived decellularized extracellular matrix (dECM)/hyaluronan hybrid hydrogel, and human submandibular gland (hSMG) organoids were established from primary cells. Both were irradiated at 0, 4, 5, and 6 Gy/day over 4 days, then assessed: OME by TEER, FITC-dextran permeability, ELISA, and qPCR, and SG organoids by live/dead assay, γ H2AX immunostaining, and ELISA. Healthy or irradiated SG organoids and irradiated OME were co-cultured for 8 days in a dynamic multi-OoC.

Results: The hybrid hydrogel enabled a full-thickness OME with rete ridge architecture, basal cytokeratin 14 (K14)-positive progenitor layers, and superficial involucrin/cytokeratin 10 (K10)-positive differentiated cells. Fractionated irradiation impaired OME barrier function, with a ~25% reduction in TEER, a 2-fold increase in FITC-dextran permeability, and dose-dependent elevation of IL-1 β , IL-6, and IL-8. In SG organoids, irradiation reduced viability to ~70% at 4 Gy and ~60% at 5–6 Gy, induced dose-dependent γ H2AX-marked DNA damage, and increased IL-1 β , IL-6, and IL-8 1.5- to 2-fold. In the multi-OoC, irradiated SG organoids did not further elevate OME cytokine levels; however, normal SG organoids reduced IL-1 β , IL-6, and IL-8 levels by 25–50% relative to irradiated OME cultured alone, suggesting an ability to alleviate the ongoing pro-inflammatory response.

Conclusions: This study established a dynamic SG-OM multi-OoC in which human models of radiation-induced oral mucositis and SG damage recapitulated both radiation injury phenotypes within a single integrated platform for disease modeling. Within it, normal SG organoids, but not irradiated ones, reduced inflammation in irradiated OME, identifying a protective SG-to-OM paracrine signal that is lost after irradiation. The multi-OoC provides a human-relevant, animal-sparing platform for dissecting SG-to-OM organ crosstalk and for screening radioprotective and mucositis-directed interventions, with ongoing work aimed at identifying the protective SG-secreted factors.

P11 | POSTER PRESENTATION

- **Presenter Name:** Ethiraj Lalith Prabha
- **Author(s):** Ethiraj Lalith Prabha, Charles Lau Chau Sang, CHI-Hwa Wang, Bee Tin Goh
- **Affiliation(s):** School, Singapore, SINGAPORE; National University of Singapore, Singapore, SINGAPORE; National Dental Centre Singapore, Singapore, SINGAPORE
- **Presentation Title:** Sulfasalazine Enhances Post-Extraction Wound Healing in a Bisphosphonate-Treated Preclinical Model: A Drug-Repurposing Trial
- **Category:** Hatton Senior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: The incidence of Medication-Related Osteonecrosis of Jaw (MRONJ), a potentially severe adverse effect of bisphosphonate (BP) use, has increased in patients with osteoporosis and cancer. MRONJ progression is driven mainly by localized immune dysregulation. This preclinical trial aimed to investigate local delivery of an NF- κ B inhibitor to restore immune homeostasis and promote post-extraction bone healing in a BP-treated animal model.

Methods: A hydrogel comprising 3% (w/v) Chitosan methacrylic anhydride (CsMe) and 6% (w/v) Gelatin methacrylic anhydride (GelMA) loaded with 2.5% (w/v) Sulfasalazine (SSZ), an FDA-approved NF- κ B inhibitor (Mix(GelMA/CsMe)+SSZ), was characterized for mechanical (Young's modulus), rheological, degradation, cytotoxicity, and drug-release properties. A preclinical trial was conducted in two 12-month-old Göttingen miniature pigs. Animals were treated with intravenous zoledronic acid (0.05 mg/kg weekly for 12 weeks) before tooth extraction and hydrogel grafting and for 8 weeks after surgery. Clinical and radiological assessments were performed on all extraction sites. Animals were euthanized 8 weeks after extraction. Harvested mandibular segments were scanned, and Micro-CT analysis quantified bone volume fraction within the extraction sockets.

Results: The Mix+SSZ hydrogel exhibited the best mechanical properties, reflecting a synergistic balance among stiffness, toughness, and structural stability. In vitro drug-release analysis indicated a significant burst release in the pure GelMA group (~70% within 24 hours), whereas the Mix(GelMA/CsMe) hydrogels showed markedly sustained release over 15 days. Clinical-macroscopic evaluation showed complete mucosal closure at Mix+SSZ sites 1 and 2 at 8 weeks. Radiographic monitoring showed a significant delay in socket healing in the control group, whereas Mix+SSZ sites exhibited increased radiopacity at weeks 4 and 6, indicating early bone formation. Micro-CT analysis confirmed higher bone volume fractions (BV%) at Mix+SSZ sites (53.5% and 73.9%) compared to controls (45.5% and 41.9%) in both animals.

Conclusions: Sustained local release of SSZ from a GelMA/CsMe hydrogel promotes predictable extraction socket healing by counteracting BP-driven immune dysregulation, supporting its potential as an MRONJ preventive strategy.

P12 | POSTER PRESENTATION

- **Presenter Name:** Adillah Radhiah Roney
- **Author(s):** Adillah Radhiah Roney, Nik Noor Idayu Nik Ibrahim, Nor Wati Nur Atikah Mustafa, Raja Azman Raja Awang Hazlina Abdul Ghani
- **Affiliation(s):** N. Mustafa, H. Abdul Ghani, Prosthodontics, Universiti Teknologi MARA, Selangor, MALAYSIA; Institute of Science, Universiti Teknologi MARA, Selangor, MALAYSIA; School of Dental Sciences, Universiti Sains Malaysia, Kelantan, MALAYSIA
- **Presentation Title:** Effects of Linseed Oil Incorporation on the Glass Transition Temperature and Elemental Composition of PMMA Denture Base Resin
- **Category:** Hatton Senior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: This in-vitro study investigates the effect of incorporating different concentrations of linseed oil on the glass transition temperature (T_g) and elemental composition of denture base PMMA under non-thermocycled and thermocycled conditions

Methods: Heat-polymerised denture base PMMA specimens containing 0% (control), 1%, 2%, and 3% linseed oil were prepared. Thermal behaviour was evaluated using differential scanning calorimetry (DSC) and T_g onset and temperature and change in heat capacity (C_p) were determined. Elemental composition were assessed using energy-dispersive X-ray spectroscopy (EDX), and carbon and oxygen atomic percentages were recorded before and after thermocycling. Results were interpreted descriptively to identify changes associated with linseed oil incorporation.

Results: Under non-thermocycled conditions, T_g onset values ranged from 100.4°C to 116.8°C, compared with 112.2°C for the control group. Following thermocycling, T_g onset values ranged from 74.4°C to 117.4°C. The 3% linseed oil group exhibited the lowest T_g onset value after thermocycling, indicating substantial alteration in thermal behaviour. Variations in ΔC_p were also observed among the experimental groups, suggesting changes in polymer chain mobility and molecular interactions. EDX analysis identified carbon and oxygen as the predominant elements in all groups. Carbon and oxygen atomic percentages remained within comparable ranges before and after thermocycling, with no marked compositional deviations attributable to linseed oil incorporation.

Conclusions: Linseed oil incorporation influenced the thermal characteristics of denture base PMMA, particularly following thermocycling, while maintaining a relatively stable elemental composition. The findings suggest that linseed oil modifies the thermal response of PMMA without producing substantial changes in elemental distribution.

P13 | POSTER PRESENTATION

- **Presenter Name:** Xiaowei Zhao
- **Author(s):** Xiaowei Zhao, May Chun Mei Wong, Katherine Chiu Man Leung, Edward Chin Man Lo
- **Affiliation(s):** University of Hong Kong, HONG KONG, HONG KONG, HONG KONG
- **Presentation Title:** Can subjective and objective masticatory performance predict HRQoL in older adults?
- **Category:** Hatton Senior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: To evaluate longitudinally whether baseline subjective and objective measures masticatory performance can predict physical and mental health-related quality of life (HRQoL) in functionally independent and dependent older adults.

Methods: This 2-year prospective cohort study recruited 782 functionally independent older adults from outpatient general medical clinics and community centres, and 219 dependent older adults from day care centres and residential homes. Assessments were administered at baseline and at 2-year follow-up. Masticatory performance was evaluated objectively using color-changeable chewing gum (a^* value) and subjectively via the Chewing Function Questionnaire (CFQ). Health-related quality of life (HRQoL) was assessed using the 12-item Short-Form Health Survey (SF-12), yielding the Physical and the Mental Component Summary scores (PCS-12 and MCS-12).

Results: A total of 807 (80.6%) participants completed the 2-year follow-up. Univariate analysis showed that baseline CFQ score was significantly associated with both 2-year PCS-12 and MCS-12 scores (Spearman's $\rho = 0.37$ and 0.14 , respectively; $p < 0.001$). However, a^* value was significantly associated with the 2-year PCS-12 score only (Spearman's $\rho = 0.30$; $p < 0.001$). These associations remained statistically significant in the fully adjusted multivariable models. Further subgroup analysis revealed that baseline CFQ score significantly predicted the 2-year PCS-12 (Coef. = 0.35 , $p = 0.002$) and MCS-12 (Coef. = 0.36 , $p = 0.009$) scores in the functionally independent group only but not in the dependent group. In contrast, baseline a^* value showed no significant association with either 2-year PCS-12 score or MCS-12 score in both subgroups.

Conclusions: In functionally independent older adults, subjective masticatory performance is a predictor of both physical and mental HRQoL.

P14 | POSTER PRESENTATION

- **Presenter Name:** Thu Ya Linn
- **Author(s):** Thu Y. Linn, Kay K. Myat, Yoon S. Zaw, Ting-Yi Renn, Wei-Jen Chang
- **Affiliation(s):** School of Dentistry, Taipei Medical University, Taipei, TAIWAN; Graduate School of Dentistry, The University of Osaka, Osaka, JAPAN; Department, Shuang-Ho Hospital, Taipei Medical University, New Taipei, TAIWAN
- **Presentation Title:** Osteoblastic Evaluation of Three-dimensional Porcine-derived Collagen Scaffolds for Bone Regeneration
- **Category:** Hatton Senior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: Periodontal regeneration requires materials capable of restoring the complex architecture of cementum, bone, and periodontal ligaments. Collagen has emerged as a widely adopted scaffold and barrier material in this field, owing to its ability to mimic the natural extracellular matrix of bone closely. This study aimed to develop a porcine-derived three-dimensional collagen scaffold to promote osteoblast cell proliferation as a strategy for periodontal regeneration therapy.

Methods: The collagen layer (~2 mm) was isolated from porcine skin and immersed in phosphate-buffered saline (PBS) at room temperature for 24 hours to remove residual debris. Three decellularization protocols were evaluated: Protocol 1, immersion in PBS at 37°C for 13 days; Protocol 2, immersion in 70% ethanol at room temperature for 24 hours followed by PBS at 37°C for 12 days; and Protocol 3, immersion in 70% ethanol at room temperature for 72 hours followed by PBS at 37°C for 10 days. All specimens subsequently underwent a controlled four-stage freezing process for 4 days before freeze-drying for 48 hours. Physicochemical characterization included histological staining, surface topography, chemical group analysis, and biodegradation rate assessment. Cytocompatibility and osteoblast biological responses were also evaluated.

Results: Histological analysis confirmed preservation of the native collagen structure with complete absence of cell nuclei following decellularization. The biodegradation rate was prolonged compared to commercial collagen products. Surface chemical analysis demonstrated high collagen content with stable structural integrity across all groups. Cytocompatibility testing yielded favorable results comparable to controls. Osteoblast cells cultured on ethanol-pretreated scaffolds exhibited significantly higher proliferation and mineralization rates. Immunofluorescence analysis revealed well-defined cytoskeletal organization with prominent nuclear staining.

Conclusions: The porcine-derived 3D collagen scaffolds demonstrated prolonged biodegradation with enhanced osteoblastic cell responses. Ethanol pretreatment combined with controlled freeze-drying represents a promising fabrication approach for developing resorbable collagen scaffolds for periodontal regeneration.

P15 | POSTER PRESENTATION

- **Presenter Name:** Hlaing Myint Myat Aung
- **Author(s):** Hlaing Myint Myat Aung, Eisner Salamanca, Ting-Yi Renn, You-Ru Ma, Wei-Jen Chang
- **Affiliation(s):** School of Dentistry, College of Oral Medicine, Taipei Medical University, Taipei, TAIWAN; Hospital, Taipei Medical University, New Taipei, TAIWAN
- **Presentation Title:** 3D-Printed β -TCP/PCL Composite Scaffolds for Enhanced Bone Regeneration
- **Category:** Hatton Senior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: Bone defects caused by different factors pose substantial challenges in orthopedic and reconstructive surgery. Repairing large bone defects requires synthetic biomaterials or tissue-engineered scaffolds as temporary matrices to restore function and support bone growth, thereby prompting the development of polymer–ceramic composite scaffolds. This study aimed to examine the potential of three-dimensional (3D) printed scaffolds fabricated with various pore sizes from different content ratios of polycaprolactone (PCL) and beta-tricalcium phosphate (β -TCP) for bone tissue engineering.

Methods: PCL and β -TCP were combined in three weight ratios of 100:0 (TCP0), 90:10 (TCP10) and 80:20 (TCP20) to fabricate 1.75 ± 0.1 mm filaments through an extruder. Scaffolds of 20 mm x 20 mm x 2 mm with rectilinear infill and three different pore sizes (1000, 700, and 500 μ m) were printed using a fused deposition modeling (FDM) 3D printer. Structural, morphological, and chemical properties were evaluated by SEM, EDS, XRD, FTIR, and contact angle analysis. Mechanical properties were assessed by tensile tests. Osteoblast-like cells were used to evaluate attachment, proliferation (MTT), differentiation (ALP), and mineralization (ARS).

Results: SEM observations showed that the surface roughness of PCL/ β -TCP scaffolds increased as the β -TCP content rose. In EDS analysis, the atomic percentages of phosphorus (P) and calcium (Ca) were highest in TCP20 with $3.45 \pm 0.53\%$ and $4.12 \pm 0.3\%$, respectively. The emergence of β -TCP peaks in XRD and the appearance of functional groups of β -TCP in FTIR indicated successful incorporation of β -TCP. The hydrophilicity improved as contact angles decreased from $84.0^\circ \pm 3.5^\circ$ to $43.2^\circ \pm 3.2^\circ$, while the yield strength decreased with increasing β -TCP concentration, 0.75 ± 0.05 MPa for TCP20R1000. Biologically, the addition of β -TCP enhanced cell proliferation, differentiation, and mineralization in osteoblast-like cells; cell attachment was observed in all groups by SEM and immunofluorescence staining.

Conclusions: The results demonstrated that TCP20 with 1000 μ m pore-size groups, which have adequate mechanical and physical characteristics, promotes cellular attachment, proliferation, differentiation, and bone mineralization, suggesting potential for clinical bone tissue engineering applications.

P16 | POSTER PRESENTATION

- **Presenter Name:** Hesti Witasari Jos Erry
- **Author(s):** Hesti Witasari Jos Erry
- **Affiliation(s):** Faculty of Dentistry, Universitas Indonesia, Jakarta, DKI Jakarta, INDONESIA; University, Jakarta, DKI Jakarta, INDONESIA
- **Presentation Title:** Exosome-Loaded Amniotic Hydrogel Modulates Regenerative Dental Pulp Stem Cell Responses
- **Category:** Hatton Senior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: Human dental pulp stem cell-derived exosomes may support dentin–pulp regeneration, but their limited local retention may reduce therapeutic efficacy. This study evaluated whether exosome-loaded human amniotic membrane hydrogel (hAM-Exo) enhances regenerative responses of human dental pulp stem cells (hDPSCs) compared with free exosomes under basal and lipopolysaccharide-stimulated conditions.

Methods: hDPSCs were treated with free exosomes or hAM-Exo at concentrations of 0.5%, 1%, and 5%, with or without lipopolysaccharide stimulation. Cell viability, metabolic activity, migration, vascular endothelial growth factor-A (VEGF-A) secretion, and dentin sialophosphoprotein (DSPP) expression were assessed using live/dead staining, MTT, scratch, and ELISA assays. Data were analysed using two-way ANOVA followed by appropriate post hoc tests.

Results: hAM-Exo was cytocompatible at all concentrations and maintained a more stable metabolic profile than free exosomes at 96 hours. Under basal conditions, 1% hAM-Exo significantly increased VEGF-A secretion at 48 hours. Under lipopolysaccharide stimulation, hAM-Exo showed better preservation of VEGF-A secretion than free exosomes. Notably, hAM-Exo at all concentrations significantly increased DSPP expression on days 7 and 14 under inflammatory conditions, indicating enhanced odontogenic responses during the early-to-intermediate regenerative phase.

Conclusions: Exosome loading into hAM hydrogel improved the stability and modulation of regenerative hDPSC responses compared with free exosomes, particularly under inflammatory conditions. These findings support hAM-Exo as a promising scaffold-assisted, cell-free strategy for regenerative endodontics.

P17 | POSTER PRESENTATION

- **Presenter Name:** Clarice Ferreira Sabino
- **Author(s):** Clarice F. Sabino, Anastasiia Grymak, Nikolaos Silikas Vinicius Rosa
- **Affiliation(s):** National University of Singapore, Singapore, SINGAPORE; Research Institute, University of Otago New Zealand, Dunedin, NEW ZEALAND; Division of Dentistry, University of Manchester, Manchester, UNITED KINGDOM
- **Presentation Title:** Digital BioScore Integrating Material and Cells for AI-Driven Biomaterial Design
- **Category:** Hatton Senior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: Biomaterial safety and performance are commonly assessed using proliferation, migration, and mineralization assays. However, these responses are influenced by experimental parameters such as specimen surface area (SA), elution volume (EV), elution time (ET), and cell passage (CP). This creates a need for frameworks that integrate multidimensional biological responses and testing parameters to support AI-guided biomaterial modelling and design. This study developed and validated a Digital BioScore (DBS) framework to generate biologically informed biomaterial performance profiles.

Methods: An L9 orthogonal array was used to vary calcium silicate cement (CSC) SA (113, 169, or 219 mm²), ET (1, 3, or 5 days), EV (5, 10, or 15 mL), and dental pulp stem cells (DPSC) CP (P1, P4, or P7) using ProRoot MTA. Proliferation, wound-healing, and mineralization assays were performed in independent triplicates and integrated into DBS models. DBS was calculated using either equal weighting, in which all biological domains contributed equally, or domain-prioritized weighting, in which one biological response was given greater importance. L9 conditions were classified into low-, intermediate-, and high-performance categories, and bootstrap resampling was used to assess classification stability. Main effects and principal component analysis were used to evaluate the contribution of experimental variables and visualize multidimensional biological performance. DBS predictions were biologically validated using gene expression (RUNX2, DSPP, DMP-1, OCN) and cytotoxicity assays.

Results: Proliferation varied 1.7-fold, migration velocity 3.4-fold, and mineralization 3.1-fold across groups. Cell passage predominantly regulated proliferative and migratory responses, whereas specimen surface area primarily influenced mineralization-associated outcomes. DBS resolved experimental conditions into stable biological performance states, with $\geq 80\%$ bootstrap classification agreement across weighting schemes. Cytocompatibility decreased with longer ET. High-performance DBS groups consistently showed higher gene expression than low-performance groups.

Conclusions: DBS transformed multidimensional cellular responses into stable, interpretable performance states, establishing a computational framework for AI-guided biomaterial design.

P18 | POSTER PRESENTATION

- **Presenter Name:** Hut Vuthypiseth
- **Author(s):** Hut Vuthypiseth
- **Affiliation(s):** University of Health Sciences, Phnom Penh, CAMBODIA
- **Presentation Title:** Burden and demographic factors associated with dental caries experiences among school-aged children at primary school students in Siem Reap in 2026
- **Category:** Hatton Senior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: This study aims to identify prevalence of DMFTs and differences in mean DMFT scores within sex and age groups among school-aged children at three primary schools. It is also to investigate association between demographic factors and presence of dental caries experiences of the children.

Methods: A cross-sectional study was conducted using a purposive sampling method. Independent variables were grade categories from 1 to grade 6, age, and sex of the students. Dental caries experience, as a dependent variable, was recorded: absent with DMFT score=0 and present with DMFT score >0. Descriptive statistics, Mann-Witney U test and Kruskal-Wallis test were computed in MS Excel and Xrealstats adds-in extension. Logistic regression for testing association was tested in STATA version 17.

Results: 588 out of 593 children were completely recorded; Of 588, 311 (52.9%) are female and 275 (46.8%) are male students. Mean age of the participants is 9.62+/-2.04, and the students were categorized into <6, 6-9, 10-12, >12 groups. Students with six grades distributed variously, with prominent numbers in third, fourth and sixth grades with 23.8%, 20.4% and 20.9%, respectively. Prevalence of DMFTs is 80.10%. Median DMFT score was 2 (IQR = 3). Difference in mean DMFT scores among male and female children was not significant ($p=0.19$). Difference in mean DMFT scores between age groups showed very strong significance ($P<0.001$). Grade was the most important predictor, attributed to presence of caries experience as grade 3, 4, 5 and 6 revealed $P<0.05$ with appropriate 95% CI, while there were not in the sex and age group.

Conclusions: Dental caries remains noticeably prevalent and at a moderate level of its burden among the children and age-related increase in DMFT scores was confirmed among the three schools at Sot Nikum district. Demographic features are attributing factors to dental caries experiences, specifically the school grade in rural communities.

P19 | POSTER PRESENTATION

- **Presenter Name:** Rahman Wahyudi
- **Author(s):** Rahman Wahyudi, Daneeya Na Nan, Vincent Everts, Soranun Chantarangsu, Somchai Yodsanga, Paksinee Kamolratanakul, Patcharee Ritprajak, Thanaphum Osathanon, Nuttapol Limjeerajarus, Chalida Limjeerajarus
- **Affiliation(s):** Faculty of Dentistry, Graduate Program in Oral Biology, Chulalongkorn University, Bangkok, Thailand, Bangkok, THAILAND; Department of Physiology, Faculty of Dentistry, Chulalongkorn University, Bangkok, Thailand, Bangkok, THAILAND; Center of Excellence in Genomics and Precision Dentistry, Faculty of Dentistry, Chulalongkorn University, Bangkok, Thailand, Bangkok, THAILAND; Center of Excellence in Regenerative Dentistry, Faculty of Dentistry, Chulalongkorn University, Bangkok, Thailand, Bangkok, THAILAND; Department of Oral Cell Biology, Academic Centre for Dentistry Amsterdam, University of Amsterdam and Vrije Universiteit, Amsterdam, The Netherlands, Amsterdam, NETHERLANDS
- **Presentation Title:** Iloprost Modulates Dental Pulp Inflammation Via cAMP-PKA-NFkB And Macrophage M2 Polarization
- **Category:** Hatton Senior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: To investigate whether iloprost modulates inflammation in human dental pulp cells (hDPCs) and tooth slices via the cAMP-PKA-NFkB pathway and promotes peripheral blood mononuclear cell (PBMC)-derived macrophage polarization toward an anti-inflammatory phenotype.

Methods: The hDPCs and tooth slices were isolated from extracted third molars and stimulated with a cytokine cocktail to mimic inflammation. The hDPCs were treated with iloprost, with or without CAY10449 (IP antagonist), forskolin (adenylate cyclase activator), or H-89 (PKA inhibitor). Cytokine expression (IL-6, IL-12, IL-10) was analyzed using RT-qPCR and ELISA. NFkB activation was evaluated by p65 nuclear translocation (immunofluorescence), and intracellular cAMP levels were measured by competitive immunoassay. In tooth slices, cytokine-induced inflammation was followed by iloprost treatment; conditioned media were analyzed for IL-6 and IL-10 (ELISA), and IL-6 expression was assessed by immunohistochemistry. Conditioned media from hDPCs were applied to PBMC-derived macrophages to assess polarization by flow cytometry (CD163, CD206), RT-qPCR (ARG-1, IL-10, TGF- β), and ELISA (IL-10).

Results: Iloprost significantly reduced IL-6 while increasing IL-10 expression in inflamed hDPCs. These effects were associated with cAMP-PKA signalling pathway and reduced p65 nuclear translocation. Conditioned media from iloprost-treated hDPCs added to macrophages enhanced CD206 expression, upregulated ARG-1, IL-10, and TGF- β mRNA, and increased IL-10 protein production, indicating M2-like polarization. In tooth slices, iloprost decreased IL-6 and increased IL-10 protein levels.

Conclusions: Iloprost exerts anti-inflammatory effects in dental pulp by activating the IP receptor-cAMP-PKA pathway, suppressing NFkB, and modulating cytokine expression. Moreover, it promotes macrophage polarization toward an anti-inflammatory phenotype, supporting its potential as an adjunctive material for vital pulp therapy.

P21 | POSTER PRESENTATION

- **Presenter Name:** Chia-Wei Chiu
- **Author(s):** Chia-Wei Chiu, Ai-Hua Chang, Chia-Chih Sung, I-Kai Su, Hsiao-Ling Huang
- **Affiliation(s):** Department of Oral Hygiene, College of Dental Medicine, Kaohsiung Medical University, Kaohsiung, Kaohsiung City, TAIWAN; School of Dentistry, College of Dental Medicine, Kaohsiung Medical University, Kaohsiung, TAIWAN; Department of Dentistry, Taoyuan General Hospital, Ministry of Health and Welfare, Taoyuan, TAIWAN; Clinic, Taoyuan, TAIWAN
- **Presentation Title:** Effectiveness of LINE-Based Home Reminders on Interdental Cleaning and Periodontal Outcomes in Patients with Periodontitis: A Randomized Controlled Trial
- **Category:** Hatton Senior Competition - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: To evaluate the effects of LINE-based home reminders on interdental cleaning behavior, periodontal outcomes, and protection motivation among patients with periodontitis.

Methods: An ongoing randomized controlled trial was conducted between July 2025 and December 2026. To date, 31 patients with periodontitis (aged 20–65 years and having at least 16 natural teeth) have been recruited and randomly assigned to an experimental group (LINE-based reminders plus oral hygiene education) or a control group (oral hygiene education alone). Both groups received standardized oral hygiene instruction, including the Bass toothbrushing technique and interdental cleaning using dental floss or interdental brushes according to individual needs. The experimental group received daily LINE reminders for one month to reinforce oral hygiene practices. Plaque index (PI), gingival index (GI), oral health-related quality of life (OHRQoL), and Protection Motivation Theory (PMT)-based measures, including threat appraisal, coping appraisal, and self-care behavior, were assessed at baseline and one month after intervention. Generalized estimating equations (GEE) were used to evaluate changes over time and between-group differences.

Results: Preliminary analysis of 31 participants demonstrated significant improvements over time in PI, GI, threat appraisal, and self-care behavior (all $p < 0.05$). Participants in the experimental group exhibited significantly lower overall PI and GI scores than those in the control group (both $p < 0.01$). However, no significant group $\times$ time interaction effects were observed for periodontal outcomes, OHRQoL, threat appraisal, coping appraisal, or self-care behavior ($p > 0.05$).

Conclusions: Preliminary findings suggest that oral hygiene education effectively improved periodontal status and self-care behavior among patients with periodontitis. Although LINE-based home reminders were associated with lower overall plaque accumulation and gingival inflammation, no significant additional intervention effect beyond conventional oral hygiene education was observed during the one-month follow-up period. Continued recruitment and longer follow-up are needed to further determine the effectiveness of mobile reminder interventions in supporting long-term periodontal self-care.

POSTER PRESENTATION

- **Presenter Name:** Irvan Septrian Syah Putra Rasad
- **Author(s):** Wiwiek Poedjiastoeti, Rachendra Pratama, Irvan Septrian Syah Putra Rasad, Indrayadi Gunardi, Jonathan A. Suryowinahu Felicia K. Tanzil Armelia S. Widyarman, Jaya Seneviratne
- **Affiliation(s):** Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Universitas Trisakti, Jakarta, INDONESIA; Department of Oral Medicine, Faculty of Dentistry, Universitas Trisakti, Jakarta, INDONESIA; Faculty of Dentistry, Universitas Trisakti, Jakarta, INDONESIA; Department of Microbiology, Faculty of Dentistry, Universitas Trisakti, Jakarta, INDONESIA; School of Dentistry, University of Queensland, Brisbane, Queensland, AUSTRALIA
- **Presentation Title:** Antibacterial, Antibiofilm, Antioxidant, and Anti-inflammatory Properties of Zizyphus mauritiana Leaf Extract for Oral Wound Healing: An In Vitro and In Vivo Study
- **Category:** General Poster Presentations - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: Post-extraction infections and delayed oral wound healing remain significant clinical challenges driven by bacterial biofilm formation, oxidative stress, and dysregulated inflammation, while conventional antibiotic therapy is limited by rising antimicrobial resistance and an inability to address the oxidative and inflammatory components of healing. This study aimed to evaluate the antibacterial and antibiofilm activity of ethanolic Zizyphus mauritiana (ZM) leaf extract against key periodontal pathogens, determine its antioxidant capacity, and assess its anti-inflammatory efficacy in a topical gel formulation for post-extraction wound healing.

Methods: Antibacterial activity against *Prevotella intermedia*, *Fusobacterium nucleatum*, *Streptococcus sanguinis*, and *Treponema denticola* was assessed via microdilution to determine minimum inhibitory (MIC) and bactericidal (MBC) concentrations. Antibiofilm efficacy was evaluated using a 96-well crystal violet biofilm assay, with results confirmed by qPCR. Antioxidant capacity was measured using the DPPH assay to calculate IC₅₀. For in vivo evaluation, 50% and 100% ZM gels were applied topically to extraction sockets in Sprague–Dawley rats (n=24, four groups). On day 3, TNF-α levels were quantified by ELISA, and inflammation was assessed by immunohistochemistry (IHC).

Results: ZM extract demonstrated strong antibacterial activity (MIC 125–500 mg/mL; MBC 250–500 mg/mL), with *F. nucleatum* showing the greatest susceptibility. Significant biofilm inhibition (>80% eradication, p<0.05) was observed across all species. Antioxidant activity was moderate (IC₅₀ = 0.137 mg/mL). In vivo, the 50% ZM gel produced the lowest TNF-α levels (118.7 pg/mL) and sparsest IHC staining among treatment groups, outperforming both the 100% gel and hyaluronic acid positive control, suggesting a non-linear, dose-dependent anti-inflammatory response.

Conclusions: Ethanolic ZM leaf extract exhibits multifunctional antibacterial, antibiofilm, antioxidant, and anti-inflammatory bioactivities, supporting its potential as a natural adjunctive therapeutic agent for controlling post-extraction oral infections and promoting wound healing.

POSTER PRESENTATION

- **Presenter Name:** Ryna Lao
- **Author(s):** Ryna Lao
- **Affiliation(s):** University of Puthisastra, Phnom Penh, CAMBODIA
- **Presentation Title:** Digital Measurement and Analysis of the Cambodian Adult Soft Tissue Profile Across Different Skeletal Malocclusions: A Retrospective Study
- **Category:** General Poster Presentations - Poster Session 1
- **Date / Time / Room:** 17 September 2026 | 11:00 AM -12:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: To compare facial soft tissue thickness among Cambodian adults with skeletal Class I, II and III malocclusions and to investigate sex-related differences in soft tissue thickness using digital cephalometric analysis.

Methods: This retrospective cross-sectional study used a quantitative research design with convenience sampling. A total of 600 lateral cephalograms of Cambodian adults aged 18–25 years were retrospectively collected from the University of Puthisastra Dental Hospital and randomly categorized into skeletal Class I, II, and III malocclusions (200 per group; 100 males and 100 females) based on Steiner skeletal analysis (SNA, SNB, and ANB angles). Facial soft tissue thickness was measured at 11 anatomical landmarks using the WebCeph software measurement tool, with both digital and manual skeletal measurements performed to improve accuracy. Only anonymized patient records, including age and sex, were analyzed. Individuals with previous orthodontic treatment, orthognathic surgery, distorted cephalograms, or missing landmarks were excluded. Data were analyzed using SPSS with descriptive statistics, paired t-tests, ANOVA, and subgroup analyses based on sex and skeletal malocclusion.

Results: In this study, lateral cephalographs were utilized to evaluate FSTT across 11 anatomical landmarks. The findings revealed that males consistently exhibited greater FSTT compared to females. Notably, statistically significant mean differences were observed at the Nasion, Rhinion, Subnasale, Labrale superius, Stomion, Labrale inferius, and Menton. These results highlight the importance of incorporating FSTT measurements into orthodontic diagnostics and treatment planning across different genders.

Conclusions: Facial soft tissue thickness in Cambodian adults differs according to skeletal malocclusion pattern and sex. These findings provide baseline reference values for the Cambodian population and may assist clinicians in orthodontic diagnosis, treatment planning and prediction of soft tissue outcomes.

POSTER PRESENTATION

- **Presenter Name:** Chanvisith Chorn
- **Author(s):** Chanvisith Chorn, Vyryka Song, Lyhout Hour, Reaksa Thoeun, Hut Vuthypiseth
- **Affiliation(s):** Faculty of Odonto-Stomatology, University of Health Sciences, Phnom Penh, CAMBODIA
- **Presentation Title:** Barriers to Research Participation Among Undergraduate Students: A Systematic Review
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: - Systematically identify and synthesize the perceived barriers and challenges to research participation among undergraduate dental students - Identify recurring themes in literature regarding proposed strategies and recommendations

Methods: A systematic review was conducted in accordance with PRISMA guidelines. A comprehensive search of PubMed identifies 1601 records. Three reviewers independently screened studies by title, abstract, and full-text based on predefined inclusion criteria. Risk of bias was assessed using the Joanna Briggs Institute (JBI) critical appraisal tools. The prevalence of reported barriers was calculated as the proportion of participants reporting each barrier relative to the total sample size. A thematic analysis was conducted for qualitative studies, and findings were synthesized narratively.

Results: Following screening, nine studies were included. Pooled prevalence across three studies identified time as the most commonly reported barrier, followed by lack of knowledge and lack of support. Thematic analysis revealed two overarching categories: intrinsic and extrinsic factors, encompassing nine barrier groups and 33 subgroups. Across studies, time remained the most prominent, alongside intrinsic factors such as limited knowledge and experience, and extrinsic factors like insufficient resources and support.

Conclusions: Undergraduate dental students face multiple interconnected barriers to research participation, ranging from factors that are within the students' control, and ones that are not. A lack of time emerged as the predominant barrier. Addressing these challenges through curriculum reforms, mentorships, and institutional support may enhance research engagement.

POSTER PRESENTATION

- **Presenter Name:** Vini Mehta
- **Author(s):** Vini Mehta
- **Affiliation(s):** College & Hospital, Dr. D. Y. Patil Vidyapeeth, Pune, Pune, Maharashtra, INDIA; Faculty of Dentistry, University of Salamanca, Pune, Maharashtra, SPAIN
- **Presentation Title:** Oral Health Status of War Veterans with Post-Traumatic Stress Disorder: A Systematic Review and Meta-Analysis
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: This study aimed to evaluate and compare the oral health status of war veterans with PTSD by synthesizing evidence on key clinical oral health outcomes.

Methods: A comprehensive literature search was conducted using PubMed-MEDLINE, Embase, Web of Science, and Scopus. The studies included in the review were observational clinical trials published in English and focused on oral health outcomes in veterans diagnosed with PTSD. The Modified Newcastle-Ottawa Scale (NOS) was utilized to evaluate the studies' quality. Heterogeneity was evaluated by I² statistics, and random-effects and fixed-effect meta-analysis were used to synthesize the data. Subgroup analyses were carried out to explore specific oral health outcomes.

Results: The meta-analysis includes seven studies that assessed the oral health outcomes of war veterans with PTSD. The analysis showed that veterans with PTSD were more likely to experience oral health issues than those without PTSD (relative risk [RR]: 2.75, 95% confidence interval [CI]: 1.26 to 6.02). In subgroup analysis, significant associations were found between PTSD and temporomandibular joint dysfunction (RR: 2.96, 95% CI: 1.19 to 7.38), as well as increased plaque accumulation (RR: 2.28, 95% CI: 1.61 to 3.24). However, PTSD was not significantly associated with periodontal disease (RR: 1.12, 95% CI: 0.00 to 14350456.14).

Conclusions: War veterans with PTSD have a significantly higher risk for oral health issues, particularly temporomandibular joint dysfunction and poor oral hygiene. Results suggests the necessity for care models that integrate mental and oral health services to improve overall well-being in this population.

POSTER PRESENTATION

- **Presenter Name:** Thi Le Quyen Nguyen
- **Author(s):** Thi Le Quyen Nguyen, Hung Hoang Trong, Minh Nguyen Duc, Tin Tran Quang
- **Affiliation(s):** Faculty of Dentistry, Pham Ngoc Thach University of Medicine, Ho Chi Minh, VIET NAM
- **Presentation Title:** Child-OIDP and Oral Health Status among Children Living with HIV in Ho Chi Minh City
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: This study aimed to assess the association between Child-OIDP and oral health status among children living with HIV in Ho Chi Minh City.

Methods: A cross-sectional study was conducted among 180 children living with HIV, aged 7–15 years, at Children's Hospital 1, Ho Chi Minh City. Oral health-related quality of life was assessed using the validated Vietnamese Child Oral Impacts on Daily Performances questionnaire across eight daily performance domains. Dental caries experience in primary and permanent dentitions was recorded using *smt_r* and *SMT_R* indices, respectively. Oral hygiene status was assessed using the Simplified Oral Hygiene Index and categorized as good, fair, or poor. Domain-specific Child-OIDP impacts were analyzed in relation to dental caries and oral hygiene status using chi-square or Fisher's exact tests.

Results: The mean age of participants was 13.1 ± 3.0 years, and 45.0% were male. Overall, 58.9% reported at least one oral impact, with a median Child-OIDP score of 1.0. Eating was the most frequently affected performance, followed by cleaning teeth and smiling. Median caries experience was 0 in both primary and permanent dentitions, while most children had fair or poor oral hygiene. The overall Child-OIDP score was not significantly associated with dental caries or oral hygiene status. However, domain-specific analysis showed significant associations between dental caries and sleeping/relaxing, smiling, and social contact. Oral hygiene status showed no consistent association with Child-OIDP domains.

Conclusions: Dental caries was associated with selected Child-OIDP domains, while oral hygiene showed limited association. Domain-specific Child-OIDP assessment may better reflect clinically relevant oral health impacts in children living with HIV.

POSTER PRESENTATION

- **Presenter Name:** Techly San
- **Author(s):** Techly San, Aobo Ma, Juan Ramon Vanegas Saenz, Guang Hong, Anand Marya
- **Affiliation(s):** Faculty of Dentistry, University of Puthisastra (UP), Phnom Penh, CAMBODIA; national Collaborative and Innovative Dentistry Division, Graduate School of Dentistry, Tohoku University, Sendai, Miyagi, JAPAN
- **Presentation Title:** Sugar Intake and Early Childhood Caries: A Cambodian Scoping Review
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: Early childhood caries (ECC) remains a critical public health challenge in Southeast Asia, with Cambodia demonstrating some of the highest global indices of disease severity. This scoping review systematically mapped the available literature to evaluate the structural, behavioral, and epidemiological evidence linking dietary sugar intake to the prevalence and severity of ECC among Cambodian preschool children aged under 6 years.

Methods: Guided by the Arksey and O'Malley framework and the PRISMA Extension for Scoping Reviews (PRISMA-ScR), systematic searches were conducted across electronic databases, including PubMed/MEDLINE, Scopus, Web of Science, and local grey literature portals, up to June 2026. Studies assessing free sugar exposure, including sugar-sweetened beverages (SSBs), commercial infant snacks, and nocturnal bottle-feeding practices in tandem with ECC prevalence or decayed, missing, and filled primary teeth (\$dmft/dmfs\$) indices among Cambodian preschoolers, were included. Two independent reviewers conducted screening, data extraction, and thematic synthesis.

Results: Eleven peer-reviewed studies and national reports met the eligibility criteria. Thematic synthesis revealed an overwhelming consensus: ECC prevalence exceeded 90% across cohorts, with mean \$dmft\$ scores ranging between 8.0 and 10.4. Elevated ECC severity was explicitly correlated with the ubiquitous and early introduction of free sugars, specifically driven by the rapid commercial penetration of ultra-processed snacks and affordable SSBs in both rural and urban Cambodian communities. Furthermore, low parental health literacy regarding hidden sugars and an absence of structured public policy targeting dietary behaviors were identified as pivotal systemic drivers of disease proliferation.

Conclusions: Current evidence establishes an alarming trajectory of high-volume, early-life sugar consumption inextricably tied to epidemic levels of untreated ECC in Cambodia. Addressing this crisis necessitates multi-sectoral public health interventions, including fiscal policies on SSBs, integration of oral health into maternal-child nutrition programs, and aggressive community-based dietary counseling.

POSTER PRESENTATION

- **Presenter Name:** Châu Phạm Thị Minh
- **Author(s):** Châu Phạm Thị Minh, Lam Le
- **Affiliation(s):** Clinic, Can Tho, Can Tho, VIET NAM; University of Medicine and Pharmacy, Can Tho, VIET NAM
- **Presentation Title:** Clinical Effectiveness of In-House Clear Aligners for Space Closure
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: To evaluate the effectiveness of in-house clear aligners in achieving complete closure of mild dental spacing and to determine treatment efficiency in adult patients.

Methods: A prospective clinical study will be conducted in adult patients presenting with mild dental spacing. Patients will be treated using thermoformed in-house clear aligners fabricated through a standardized digital workflow consisting of intraoral scanning, virtual treatment planning, three-dimensional printed models, and vacuum-formed aligners. The primary outcome will be the reduction in interdental spacing measured on digital models by superimposition before and after treatment. Secondary outcomes will include treatment duration, number of aligners, number of refinement stages, and the percentage of complete space closure. Pre- and post-treatment measurements will be compared using paired statistical tests.

Results: Clinical and digital outcomes will be analyzed to determine the amount of space closure achieved, treatment efficiency, and the frequency of refinement required to complete treatment.

Conclusions: The findings of this study will clarify the clinical applicability of in-house clear aligners for the treatment of mild dental spacing and may support their use as a predictable and cost-effective treatment option in daily orthodontic practice.

POSTER PRESENTATION

- **Presenter Name:** Gia Hy Luong
- **Author(s):** Gia Hy Luong, Khanh Nguyen Minh Chau Ngo, Hung Hoang Trong
- **Affiliation(s):** Faculty of Dentistry, Pham Ngoc Thach University of Medicine, Ho Chi Minh, VIET NAM;
Faculty of Dentistry, University of Medicine and Pharmacy at Ho Chi Minh city, Ho Chi Minh, VIET NAM;
National Hospital of Odontostomatology Ho Chi Minh city, Ho Chi Minh, VIET NAM
- **Presentation Title:** One-Year Progression of Early Childhood Caries among Preschool Children in a School-Based Oral Health Care Program
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: To evaluate the one-year progression of early childhood caries (ECC) among preschool children participating in a school-based oral health care program in Vinh Long Province.

Methods: A longitudinal school-based study was conducted among 125 preschool children aged 3–4 years. Dental examinations were performed at baseline and after one school year using the International Caries Detection and Assessment System (ICDAS). Caries progression was assessed at the primary tooth-surface level by comparing paired ICDAS scores between the two examinations. New S1 lesions were defined as sound surfaces at baseline that changed to ICDAS ≥ 1 at follow-up. New S3 lesions were defined as baseline sound surfaces that progressed to ICDAS ≥ 3 . Progression of existing lesions was defined as an increase to a higher ICDAS score.

Results: Among 125 children, 122 had valid paired tooth-surface data, yielding 10,535 analyzable paired observations. At the surface level, S1 caries increased from 46.9% at baseline to 52.1% after one school year, while S3 caries increased from 21.9% to 29.6%. Of 5,596 sound surfaces at baseline, 1,239 (22.1%) developed new S1 lesions, including 508 (9.1%) new S3 lesions. Among surfaces below the S3 threshold at baseline, 954/8,223 (11.6%) progressed to S3. Overall, 20.6% of paired surfaces worsened to a higher ICDAS score, while 71.6% remained stable. At the child level, 87.7% developed at least one new S1 lesion and 69.7% developed at least one new S3 lesion.

Conclusions: ECC continued to progress after one school year despite participation in a school-based oral health care program. Strengthened risk-based prevention and non-invasive caries management are needed for preschool children.

POSTER PRESENTATION

- **Presenter Name:** Trieu Ton
- **Author(S):** Trieu Ton, Chanh Le Trung, Tien Ho Huu, Hung Hoang Trong
- **Affiliation(s):** Faculty of Dentistry, Pham Ngoc Thach University of Medicine, Ho Chi Minh City, VIET NAM
- **Presentation Title:** Effectiveness of NH4F Fluoride Varnish in Preventing Early Childhood Caries Progression: An ICDAS State-Transition Matrix Analysis
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: To evaluate the effectiveness of NH4F fluoride varnish (FV-NH4F) in preventing early childhood caries progression among 3-year-old children using tooth-level ICDAS state-transition matrix analysis.

Methods: A controlled clinical trial was conducted among 154 children with early childhood caries in Ba Ria–Vung Tau, Vietnam. Children received either FV-NH4F plus the standard School Dental Program (n=79) or the standard program alone (n=75). Dental caries was assessed at baseline, 6 months, and 9 months using ICDAS. For each child, tooth-level ICDAS changes were recorded, and state-transition matrices were constructed by aggregating individual teeth within each study group. Progression was defined as transition from ICDAS 0–2 to ICDAS 3–6. Caries increments and transition proportions were compared between groups.

Results: At 6 months, progression from ICDAS 0–2 to ICDAS 3–6 was significantly lower in the FV-NH4F group than in controls (10.4% vs. 14.3%; OR=0.70; RR=0.73; p=0.006). At 9 months, the preventive effect became more evident. New cavitated caries increments were significantly lower in the FV-NH4F group for $\Delta d3t$ (1.77 ± 2.28 vs. 2.67 ± 2.81 ; prevented fraction=33.7%; p=0.031) and $\Delta d3mft$ (1.81 ± 2.23 vs. 2.79 ± 2.86 ; prevented fraction=35.1%; p=0.019). Tooth-level progression from ICDAS 0–2 to ICDAS 3–6 was also reduced (14.0% vs. 22.1%; OR=0.57; RR=0.63; p<0.001).

Conclusions: FV-NH4F significantly reduced early caries progression into cavitated lesions. ICDAS state-transition analysis supports its integration into preschool oral health programs.

POSTER PRESENTATION

- **Presenter Name:** Khanh Nguyen Minh
- **Author(s):** Khanh Nguyen Minh, Chanh Le Trung, Chau Ngo, Khai Q. Dao Gia Hy Luong HUNG HOANG TRONG
- **Affiliation(s):** National Hospital of Odonto - Stomatology in Ho Chi Minh City, Ho Chi Minh, VIET NAM; University of Medicine and Pharmacy at Ho Chi Minh City, Ho Chi Minh, VIETNAM; University of Medicine, Ho Chi Minh, VIETNAM
- **Presentation Title:** Clinical Effectiveness of 38% Silver Diamine Fluoride for Early Childhood Caries Management: A Six-Month Randomized Trial
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: This study evaluated the six-month effectiveness of 38% silver diamine fluoride (SDF), compared with 5% fluoride varnish (FV) and a conventional school dental program (SDP), in arresting active dentin caries and preventing new cavitated lesions among 3- to 4-year-old children with ECC.

Methods: A randomized clinical trial was conducted among 315 preschool children with ECC in Vinh Long Province, Vietnam. Participants were randomly allocated into three equal groups: 38% SDF, 5% FV, and SDP. Dental caries status was assessed using ICDAS II at baseline, 1 month, 3 months, and 6 months. Main outcomes included the incidence of new cavitated ECC lesions at the s3 threshold, changes in dmft/dmfs indices, and arrest of active dentin caries lesions. Between-group differences were analyzed at 6 months.

Results: At 6 months, the incidence of new s3 cavitated ECC lesions was lowest in the SDF group (1.0%), compared with FV (4.8%) and SDP (9.4%) ($p < 0.05$). Mean dmft and dmfs remained stable in the SDF group ($p > 0.05$), whereas both indices increased significantly in the SDP group ($p < 0.001$). The arrest rate of active dentin lesions reached 48.0% in the SDF group, corresponding to 6.4-fold and 30.3-fold higher arrest than FV and SDP, respectively ($p < 0.001$).

Conclusions: School-based 38% SDF was more effective than FV and SDP in arresting active dentin caries and reducing new cavitated ECC lesions, supporting its use as a practical minimally invasive strategy for preschool caries control.

POSTER PRESENTATION

- **Presenter Name:** Kaung Khant Ye Mon
- **Author(s):** Kaung Khant Ye Mon, Ting-Yi Renn, Wei-Jen Chang
- **Affiliation(s):** School of Dentistry, Taipei Medical University, Taipei, Taipei, TAIWAN
- **Presentation Title:** Sol-Gel Sr-BCP Functionalization of Mg-1Ca Alloy for Dental Applications
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: This study aimed to develop a multifunctional strontium-incorporated biphasic calcium phosphate (Sr-BCP) sol-gel coating on biodegradable Mg-1Ca alloy to enhance corrosion resistance, surface stability, and bioactivity through controlled surface modification for potential dental implant applications.

Methods: Mg-1Ca alloy disks were mechanically polished and coated using a sol-gel dip-coating method. Biphasic calcium phosphate(BCP) was incorporated with sodium alginate and sodium pyrophosphate decahydrate in ddH₂O. Two Strontium concentrations (0.005 M and 0.01 M) were introduced to fabricate experimental groups. The coated specimens were dried at 55°C for 4 h and stored under dry conditions. Surface characterization was performed using scanning electron microscopy, energy-dispersive spectroscopy, X-ray diffraction, X-ray photoelectron spectroscopy, secondary ion mass spectrometry, surface roughness, wettability, and coating thickness analyses.

Results: SEM demonstrated successful deposition of homogeneous coatings on Mg-1Ca surfaces. EDS confirmed the presence of Ca, P, and Sr elements in coated groups, with increasing Sr content observed in experimental samples. XRD identified characteristic hydroxyapatite and β -tricalcium phosphate phases. Surface roughness increased, while contact angle measurements demonstrated enhanced hydrophilicity in coated groups compared with uncoated Mg-1Ca alloy. XPS and SIMS analyses verified the incorporation and distribution of Sr and phosphate-related elements throughout the coating layer. Coating thickness analysis confirmed continuous surface coverage in Sr-containing groups.

Conclusions: Sr-BCP sol-gel coatings successfully enhanced the surface characteristics of Mg-1Ca alloy, suggesting promising potential for biodegradable dental implant applications; however, further biocompatibility evaluations are required to confirm their suitability for clinical use.

POSTER PRESENTATION

- **Presenter Name:** Ankita Mathur
- **Author(s):** Ankita Mathur
- **Affiliation(s):** Research Cell, Dr. D. Y. Patil Dental College & Hospital, Dr. D. Y. Patil Vidyapeeth (Deemed to be University), Pune, Pune, Maharashtra, INDIA
- **Presentation Title:** Effectiveness of Interdental Brushes in the reduction of Periodontal disease: An Umbrella review
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: This umbrella review aims to present a comprehensive overview of the highest-level evidence on the effectiveness of interdental brushes in reducing periodontal risk.

Methods: Two independent reviewers conducted a systematic literature search focusing on research questions across electronic databases like PubMed, Scopus, and Embase to retrieve relevant research records. Data was extracted and systematically analyzed. Lastly, quality assessment was conducted using the AMSTAR 2.0 tool to assess the methodological robustness of the included studies.

Results: A total of seven studies were included in the final review. Corrected overlap percentage of the included primary studies in the systematic reviews and meta-analysis was 18.83%. A total of 9113 patients with periodontal disease. The participants' ages ranged from 18 to 82 years, with an overall dropout rate of 27.19%. Analysis revealed statistically significant evidence that interdental brushing reduces the risk of periodontal disease ($p < .05$) however, overall effects on periodontal pocket depth were inconclusive compared to dental floss, woodstick, or toothbrush alone. Quality assessment showed that studies were reasonable however, full methodological robustness was significantly missing.

Conclusions: This umbrella review demonstrated the promising potential of IDB compared to other cleaning tools for reducing the risk of periodontal diseases. Furthermore, the authors emphasize the need for more robust, comprehensive studies to guide future treatment planning and improve the management of periodontal disease.

POSTER PRESENTATION

- **Presenter Name:** Swiluva Sigalovada Swilly Sumardy Ma
- **Author(s):** Swiluva S. Sumardy Ma, Indrayadi Gunardi, Armelia S. Widyarman Rika Bur
- **Affiliation(s):** School, Jakarta, INDONESIA; Department of Oral Medicine, Faculty of Dentistry, Universitas Trisakti, Jakarta, INDONESIA; Department of Microbiology, Faculty of Dentistry, Universitas Trisakti, Jakarta, INDONESIA; Department of Internal Medicine, Faculty of Dentistry, Yarsi University, Jakarta, INDONESIA
- **Presentation Title:** The Impact of Listening to Music on Gut Health and Salivary Cortisol in Young Adults
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: The gut-brain axis is a bidirectional communication system linking the central nervous system with the gastrointestinal tract through neural (vagus nerve), endocrine (hypothalamic-pituitary-adrenal or HPA axis), and immune pathways. Stress activates the HPA axis, elevating cortisol levels, which can disrupt gut motility, increase intestinal permeability, and contribute to gastrointestinal symptoms such as bloating and abdominal discomfort. Music listening, particularly classical compositions with structured and predictable tempos like Mozart's sonatas, has been shown to modulate the autonomic nervous system (ANS) toward parasympathetic dominance, reducing physiological stress markers. This study aims to analyse the impact of listening to relaxing music on gut health and salivary cortisol in young adults.

Methods: A total of 60 healthy young adults (aged 18–30 years), Music Group (n=30): Participants will listen to a standardized 30-minute playlist of relaxing music. Silence Control Group (n=30): Participants will sit quietly for 30 minutes daily with no auditory input. Salivary Cortisol Levels: Collected via the passive spitting method and analysed using the ELISA method. Self-Reported Gut Health: Measured with an adapted Gastrointestinal Symptom Rating Scale

Results: Significant changes were observed in PSS-10 scores in both the intervention group ($p < 0.001$) and the control group ($p = 0.020$). In the intervention group, significant changes were also found in positive PANAS scores ($p = 0.036$), negative PANAS scores ($p < 0.001$). Salivary cortisol level from pre to post intervention was significantly lower in the intervention group than in the control group ($p = 0.044$), indicating a greater reduction in cortisol following the Mozart music intervention.

Conclusions: Listening to music for 30 minutes daily over 4 weeks reduced the salivary cortisol levels and stress levels as well as self-reported gut health (gastrointestinal symptom severity and stool consistency) in young adults.

POSTER PRESENTATION

- **Presenter Name:** Rohaida Abdul Halim
- **Author(s):** Rohaida Abdul Halim, Nur Nazihah Muhammad Hanifah, Ilham Wan Mokhtar, Nabihah Dzaruddin Ahmad Shuhud Irfani Zakaria, Ahmad Faisal Ismail
- **Affiliation(s):** Centre of Studies for Paediatric Dentistry & Orthodontics, Faculty of Dentistry, Universiti Teknologi MARA (UiTM), Sungai Buloh, Selangor, MALAYSIA; Ministry of Health, Kompleks E., Wilayah Persekutuan, Putrajaya, MALAYSIA; Department of Paediatric Dentistry & Orthodontics, Universiti Malaya, Kuala Lumpur, MALAYSIA; Faculty of Dentistry, Universiti Kebangsaan Malaysia, Kuala Lumpur, MALAYSIA; national Islamic University Malaysia, Kuantan, Pahang, MALAYSIA
- **Presentation Title:** Bibliometric and Scoping Review of Paediatric Dental Trauma
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: To evaluate the global prevalence, research trends, and treatment outcomes of paediatric TDI through a comprehensive bibliometric and scoping review.

Methods: A structured literature search was conducted across Scopus, Web of Science, and ScienceDirect. Out of 69 unique articles screened, 44 peer-reviewed publications met the strict inclusion criteria. Bibliometric mapping and keyword co-occurrence analyses were performed to identify research patterns, top contributors, and emerging themes.

Results: Paediatric dental trauma remains a critical global public health concern, affecting approximately 15% of preschool children and 20–25% of school-aged children. Injuries to deciduous teeth are highly consequential, threatening speech, nutrition, oral function, and normal craniofacial development. The analysis revealed limited collaboration among global authors and institutions, with a heavy reliance on a small cluster of highly cited papers. However, research focus is progressively shifting from isolated clinical outcomes toward broader epidemiological, socioeconomic, and environmental risk factors, as well as oral health-related quality of life.

Conclusions: Effectively managing paediatric TDI requires a strong emphasis on prevention, early diagnosis, prompt intervention, and long-term follow-up. Enhancing collaborative, multi-institutional research is vital to developing superior evidence-based prevention and clinical management strategies worldwide.

POSTER PRESENTATION

- **Presenter Name:** Edward C.M. Lo
- **Author(s):** Edward C. Lo, Xiaowei Zhao, Vicky M. Chan, Katherine Chiu Man Leung
- **Affiliation(s):** Faculty of Dentistry, University of Hong Kong, Hong Kong, HONG KONG
- **Presentation Title:** Association between masticatory performance and decline in cognitive function: a systematic review of longitudinal studies
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: To describe the longitudinal associations between masticatory performance and the risk of cognitive decline or onset of dementia.

Methods: A systematic search was conducted across five electronic databases (PubMed, Embase, Web of Science, Scopus, and Cochrane Library) from inception through October 2025 to identify cohort studies investigating the longitudinal associations between masticatory performance and cognitive outcomes, including cognitive decline (such as mild cognitive impairment and subjective cognitive complaints) and onset of dementia. The methodological quality of the included studies was assessed using the Newcastle-Ottawa Scale (NOS). Data on the longitudinal associations between objectively measured or subjectively reported masticatory performance, and cognitive function were extracted.

Results: Sixteen cohort studies were included in this review. Of these, 11 studies utilized subjective evaluation of masticatory performance, 4 employed objective clinical measurements, and 1 used both methods. In the 9 studies reporting on cognitive decline and subjectively assessed impairment of masticatory performance, all (100%) found that there was a statistically significant longitudinal association. However, only 60% of the 5 studies reporting on cognitive decline and objectively assessed impairment of masticatory performance found so. In the 4 studies on onset of dementia and masticatory performance, inconsistent results were found.

Conclusions: This systematic review indicates that impaired masticatory performance, particularly when assessed subjectively, is a significant predictor of future cognitive decline. Despite this, further studies are required to clarify the longitudinal association between masticatory performance and the onset of dementia.

POSTER PRESENTATION

- **Presenter Name:** Mohmed Isaqali Karobari
- **Author(s):** Mohmed Isaqali Karobari, Abdul habeeb Adil
- **Affiliation(s):** college and Hospital, Chennai, INDIA; College and Hospitals, Chennai, INDIA
- **Presentation Title:** Artificial Intelligence–Assisted Academic Writing in Dentistry
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: Synthesise evidence on AI-assisted academic writing in dentistry, examine emerging ethical and integrity-related concerns associated with generative AI , and provide discipline-sensitive recommendations for AI within dental scholarship, education, and publication practices.

Methods: The current scoping review was conducted following JBI methodology and PRISMA-ScR guidelines. PubMed, Scopus, Web of Science, Google Scholar, and grey-literature sources were searched for English-language publications (2022–September 2025) related to AI-assisted academic writing in dentistry. Studies addressing AI-supported writing, publication ethics, editorial policy, or scholarly communication in dentistry were included, while studies focused solely on clinical AI applications were excluded.

Results: From 1,715 records, 21 studies were included. These comprised narrative reviews, bibliometric and scoping reviews, commentaries, book chapters and educational guides, conceptual and consensus studies, systematic reviews and meta-analyses, validation studies, comparative studies, and observational or cross-sectional investigations. The evidence showed increasing use of AI tools in dental academic writing for editing, summarising literature, drafting content, and supporting education. Across studies, key concerns included plagiarism, hallucinations, fabricated citations, data privacy issues, and authorship disputes. AI-detection tools showed inconsistent accuracy, raising fairness concerns. Editorial responses were emerging but inconsistent; around 71% of dental journals had AI-related policies, while institutional or dental-specific guidelines remained limited.

Conclusions: Generative AI is increasingly influencing academic writing and education in dentistry, introducing new considerations related to academic integrity, transparency, and scholarly responsibility. Current evidence and institutional policies remain limited and inconsistent, with much of the available literature being conceptual rather than empirical. Clear governance frameworks strengthened AI literacy, and responsible human oversight may help support ethical integration of AI-assisted writing tools within dental scholarship.

POSTER PRESENTATION

- **Presenter Name:** Leanna Nicole Balagot
- **Author(s):** Leanna Nicole Balagot, Marielle Jois M. Agapay, Rochico Bete, Sophia Guinevere Casignia, Vemielle Fianya-ao, Arvil Juan, Heinz Me Padilla, Jan Dannel Vinluan
- **Affiliation(s):** University of Baguio, Baguio City, Benguet, PHILIPPINES
- **Presentation Title:** Utilization of Artificial Intelligence in Enhancing Knowledge and Attitudes Toward Oral Hygiene and Preventive Care Among High School Students
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: Artificial Intelligence (AI) has become increasingly integrated into education and serves as a readily accessible source of information for students. Its growing use in health education presents opportunities to improve awareness and promote positive oral health behaviors among adolescents. This study determined the utilization of Artificial Intelligence in enhancing knowledge and attitudes toward oral hygiene and preventive care among high school students. Specifically, it identified the types of AI tools used, assessed the level of knowledge and attitudes toward oral hygiene and preventive care, determined the influence of AI, and compared these variables according to grade level.

Methods: A descriptive quantitative research design is used among 334 Grade 7 to Grade 12 students selected through stratified random sampling. A validated and reliability tested questionnaire was utilized to gather data. Frequency, percentage, weighted mean, standard deviation, and Kruskal-Wallis H-Test were used in the statistical treatment of data.

Results: The findings revealed that chatbots and virtual assistants such as ChatGPT and Gemini were the most commonly used AI tools among respondents. The students were slightly knowledgeable regarding oral hygiene and preventive care, demonstrated a very positive attitude toward oral hygiene and preventive care, and perceived AI as highly influential in improving their awareness and understanding of oral health. No significant differences were found in the levels of knowledge, attitudes, and influence of AI when respondents were grouped according to grade level.

Conclusions: The findings suggest that Artificial Intelligence is a valuable educational resource in promoting oral health awareness and preventive care among high school students. The integration of AI-based learning tools into oral health education programs is recommended to further enhance students' knowledge and encourage positive oral health behaviors.

POSTER PRESENTATION

- **Presenter Name:** May Chun Mei Wong
- **Author(s):** Yinghao Xiong, Vicky M. Chan, Pei Liu, Edward Chin Man Lo, May Chun Mei Wong
- **Affiliation(s):** Faculty of Dentistry, The University of Hong Kong, Hong Kong SAR, HONG KONG
- **Presentation Title:** Understanding Orthodontic Treatment Uptake Among Hong Kong Adolescents: A Qualitative Study
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: This study aimed to identify the primary reasons for uptake of orthodontic treatment among Hong Kong secondary school adolescents and to explore the barriers and facilitators that influence the decision-making process between those who underwent treatment and those who did not.

Methods: Semi-structured face-to-face individual interviews with Hong Kong secondary school adolescents were conducted. Criterion sampling was used to recruit participants who met the eligibility requirements: adolescents who required orthodontic treatment and had started or completed it. For triangulation purposes, adolescents who required treatment but did not pursue it were also invited. An open-ended guide focusing on reasons, barriers, and facilitators regarding treatment choices was used during the interviews. With informed consent from parents or guardians and participant assent, interviews were audio-recorded and transcribed verbatim and then coded by two trained researchers using NVivo software for data management and analysis. Transcripts were analyzed using an inductive-deductive thematic analysis to identify and categorize themes.

Results: Twenty-seven adolescents participated in the study (nine boys and eighteen girls). Those who underwent treatment highlighted that self-driven aesthetic pursuits and parental-driven motivation influenced their decision. Despite the physical discomfort and functional issues complained of by the students, none expressed regret about pursuing orthodontic care. On the other hand, among those who did not undergo the treatment, financial burden and the lengthy process were emphasized as the barriers to treatment.

Conclusions: This study provides evidence that the decision to undergo orthodontic treatment among Hong Kong secondary school students is motivated by aesthetic pursuits and parental support, outweighing the physical discomforts of the procedure. However, practical constraints—specifically financial costs and lengthy treatment durations—remain significant barriers for adolescents who forgo care.

POSTER PRESENTATION

- **Presenter Name:** Yuga Maeda
- **Author(s):** Yuga Maeda, Ting-Yi Renn, Kento Okamoto, Yume Ueda, Kai Omachi, Nanako Kataoka, Yukina Kobayashi, Mikihiro Kajiya, Souichi Yanamoto, Naichia Teng, Toshinori Ando
- **Affiliation(s):** Department of Oral Oncology, Graduate School of Biomedical and Health Sciences, Hiroshima University, Hiroshima, Hiroshima, Japan; School of Dentistry, College of Oral Medicine, Taipei Medical University, Taipei, Taiwan, Taiwan; Department of Oral And Maxillofacial Pathobiology, Graduate School of Biomedical And Health Sciences, Hiroshima University, Hiroshima, Hiroshima, Japan; Center of Oral Clinical Examination, Hiroshima University Hospital, Hiroshima, Hiroshima, Japan; Department, Taipei Medical University Hospital, Taipei, Taiwan, Taiwan
- **Presentation Title:** Promoting effects of heat-not-burn tobacco on initiation of oral cancer
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: Combustible tobacco smoking is a well-established risk factor for oral squamous cell carcinoma (OSCC). While traditional smoking rates are declining globally, the use of heat-not-burn (HnB) tobacco products is rapidly increasing. Despite the presence of potentially harmful chemicals in HnB aerosols, few studies have investigated their short- and long-term safety or their specific role in OSCC pathogenesis. Therefore, this study aimed to investigate the potential effects of HnB tobacco on the initiation of OSCC.

Methods: Immortalized human keratinocytes (HaCaT cells) were treated with particulate matter from conventional tobacco and HnB dissolved into DMSO for short-term (3 days) and long-term (2 months) periods. Cellular signaling pathways were assessed using western blot analysis. Genomic alterations were evaluated by subjecting extracted DNA to whole-exome sequencing (WES).

Results: Following short-term exposure, high concentrations of conventional tobacco extract reduced cell proliferation, whereas HnB treatment promoted it. Both HnB and conventional tobacco in short-term treatment activated MAPK (elevated pERK1/2) and AKT-mTOR (elevated pS6) pathways. Furthermore, long-term (2 months) exposure to both products sustained pERK1/2 elevation. Exome sequencing revealed that long-term HnB and conventional tobacco treatment induced somatic mutations relatively frequently observed in the TCGA (The Cancer Genome Atlas) head and neck cancer dataset, although the tumor mutational burden (TMB) was higher in the conventional tobacco group than HnB.

Conclusions: HnB tobacco promotes the proliferation of normal keratinocytes through the activation of MAPK and AKT-mTOR pathways. Furthermore, long-term HnB exposure sustains MAPK activation and induces OSCC-associated somatic mutations. These findings indicate that HnB tobacco use poses a potential risk for the malignant transformation of oral keratinocytes into OSCC.

POSTER PRESENTATION

- **Presenter Name:** Ivan Virgilio Reyes
- **Author(s):** Ivan Virgilio Reyes, Janoell Jovani Medina, Angelica Janzen Gayo, Ronelyn Joy Eligino, Daniela Arciaga, Elize Liana Labao, Mary Maxzen Soriano, Kyla Miguel
- **Affiliation(s):** School of Dentistry, University of Baguio, Baguio, Benguet, Philippines
- **Presentation Title:** Experiences of Families Facing Economic Challenges in Sitio Malagayuma, Paniqui, Tarlac on Preventive Oral Health Care
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: This study examined the experiences of families facing economic challenges particularly in Sitio Malagayuma, Paniqui, Tarlac, regarding preventive oral health care focusing on their knowledge, attitudes, and practices—the barriers they encounter, the prioritization of oral health in relation to other household needs, and the coping mechanisms they employ in managing oral health concerns.

Methods: A qualitative research design utilizing thematic analysis to examine participants' lived experiences. Moreover, purposive sampling was used to select 15 respondents residing in Sitio Malagayuma. Data was collected through the use of a semi-structured interview guide and audio-recorded interviews, allowing participants to share their experiences and beliefs in-depth. The collected data were transcribed and analyzed thematically following the framework of Braun and Clarke's Thematic Analysis.

Results: Results revealed that participants showed basic awareness of preventive oral health practices, particularly tooth-brushing and limiting sugary food intake, as most of this knowledge was acquired through family members, schools, and social media. Despite this awareness, preventive practices were often inconsistent and largely motivated by the desire to avoid pain rather than maintain long-term oral health.

Conclusions: As a result, oral health was frequently neglected in favor of food, education, utilities, and other immediate necessities. In order for them to manage oral health concerns, participants commonly relied on self-medication, home remedies, herbal treatments, and pain endurance when professional dental care was inaccessible.

POSTER PRESENTATION

- **Presenter Name:** Zhaira Grail Andiso
- **Author(s):** Zhaira Grail Andiso
- **Affiliation(s):** Colleges Manila, Manila, Philippines
- **Presentation Title:** Oral Health Outreach: An assessment of Dental Mission Services in Del Carmen, Siargao
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: General: The study aims to assess the dental mission services provided during the oral health outreach program in Del Carmen, Siargao. Specific: To describe the demographic profile of the participants. To assess the oral health condition of the participants using DMFT findings. To evaluate the oral health awareness and oral hygiene practices of the participants. To determine the participants' perception regarding the dental mission services provided.

Methods: This study used a Descriptive-Evaluate (Quantitative) research design to assess the effectiveness of a dental mission in Del Carmen, Siargao. Using convenience sampling, participants aged 18 and above from Brgy. Halian and Brgy. Caub were selected. Data on oral health status, hygiene practices, access to dental care, perception, mean, and the DMFT index. Ethical standards, including informed consent, confidentiality, and voluntary participation, were strictly observed.

Results: Dental outreach programs played a crucial role in improving access to oral healthcare for underserved communities with limited dental facilities. DMFT results showed that missing teeth had the highest mean score, followed by filled and decayed teeth, suggesting the impact of previous dental interventions such as extractions, restorations, and prophylaxis. Most respondents demonstrated good oral hygiene practices, including brushing 2-3 times daily, and reported positive perceptions of their oral health. However, despite these favorable outcomes, dental caries remained prevalent, highlighting the need for sustained preventive and treatment-focused oral health.

Conclusions: The study concluded that dental missions positively impact oral health awareness and improve access to oral health services in rural communities. However, the findings highlight the continuing need for preventive dental care, oral health education, and sustainable community-based outreach programs to achieve long-term improvements in geographically isolated areas. Overall, the study emphasizes the vital role of dental outreach programs in providing essential oral health services to communities with limited or no access to permanent dental facilities.

POSTER PRESENTATION

- **Presenter Name:** Sandhya Raghu
- **Author(s):** Sandhya Raghu
- **Affiliation(s):** College and Hospital, Chennai, Tamil Nadu, India
- **Presentation Title:** Antioxidant, Anti-Inflammatory, and Antibiofilm Activity of Aspartic Acid-Loaded PCL Nanofibers
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: To evaluate and compare the antioxidant, anti-inflammatory, and antibiofilm activity of electrospun polycaprolactone–nano-hydroxyapatite (PCL/nHA) and polycaprolactone–nano-hydroxyapatite–aspartic acid (PCL/nHA/Asp) scaffolds for potential application in dental tissue regeneration.

Methods: The study was conducted on two groups, electrospun PCL/nHA and PCL/nHA/Asp scaffolds. The fabricated scaffolds were subjected to the following in vitro studies. Antioxidant activity was assessed using the DPPH radical scavenging assay with Trolox as the control. Anti-inflammatory potential was determined by bovine serum albumin (BSA) protein denaturation assay with Diclofenac sodium as the control. Antibiofilm activity was evaluated against *Streptococcus mutans* and *Lactobacillus acidophilus* using the crystal violet biofilm inhibition assay. A sterile medium without bacteria was used as control. Data were analyzed using one-way ANOVA with Tukey's post-hoc test ($p < 0.05$).

Results: PCL/nHA scaffolds demonstrated consistently high antioxidant activity (>90%) and strong inhibition of protein denaturation (up to 93%). PCL/nHA/Asp scaffolds exhibited moderate, concentration-dependent antioxidant activity (33–67%) and moderate anti-inflammatory effects. Both scaffolds inhibited biofilm formation; however, PCL/nHA/Asp showed superior antibiofilm efficacy against all tested microorganisms.

Conclusions: PCL/nHA and PCL/nHA/Asp scaffolds exhibited complementary multifunctional properties. PCL/nHA provided enhanced antioxidant and anti-inflammatory effects. PCL/nHA/Asp demonstrated antibiofilm activity, supporting their potential as tailored biomaterials for regenerative endodontic and periodontal applications.

POSTER PRESENTATION

- **Presenter Name:** Thi Uyen Anh Dong
- **Author(s):** Thi Uyen Anh Dong, Ting-Yi Renn, You-Ru Ma, Wei-Jen Chang, Eisner Salamanca
- **Affiliation(s):** School of Dentistry, Taipei Medical University, Taipei, Taiwan; Department, Shuangho Hospital, New Taipei, Taiwan
- **Presentation Title:** Polydopamine-Assisted Nanodiamond Coating Zirconia Enhances Zirconia Implant Bioactivity
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: Zirconia implants are a promising metal-free alternative with excellent biocompatibility and esthetics; however, surface modification is still needed to enhance osseointegration. This study aimed to evaluate the physicochemical properties and biological responses of zirconia surfaces following polydopamine-assisted nanodiamond coating.

Methods: Zirconia disks were sonicated in a dopamine hydrochloride solution (0.5 mg/mL) containing nanodiamond (0.05 mg/mL), prepared in Tris buffer (pH 8.5), at 40kHz and 60 °C. Modified surface characteristics were assessed using wettability measurements, scanning electron microscopy (SEM), energy-dispersive spectroscopy (EDS), and surface roughness analysis on days 1, 3, and 5.

Results: The modified zirconia surface showed significantly improved wettability, with the contact angle decreasing from 73.65°C in the zirconia control to 25.85°C in the coated group (mean difference = 47.80°C ($p < 0.001$)). EDS results indicated increased carbon and nitrogen-related signals while SEM images showed enhanced surface roughness attributable to nanodiamond attachment. Cell viability assay exhibited a higher proliferation on Zr-ND disks than on unmodified zirconia disks by day 5. Furthermore, Zr-ND significantly enhanced ALP activity on Day 5 compared with unmodified Zr groups ($p < 0.001$). Two-way ANOVA further confirmed a significant time-by-material interaction ($p = 0.0027$), suggesting a potential positive effect on early osteoblast-like cell differentiation.

Conclusions: Polydopamine-assisted nanodiamond coating enhances the surface bioactivity of zirconia and promotes biological responses, suggesting its potential as a surface engineering strategy for implant materials through the integration of organic and nanostructured components.

POSTER PRESENTATION

- **Presenter Name:** Phyto Arkar
- **Author(s):** Phyto Arkar, Ting-Yi Renn, You-Ru Ma, Wei-Jen Chang
- **Affiliation(s):** School of Dentistry, Taipei Medical University, Taipei, Taipei, Taiwan; Department, Shuang Ho Hospital, New Taipei, Taiwan
- **Presentation Title:** Carbonate Apatite Scaffold-Based Bone Organoids for Bone Regeneration
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: Bone defects remain a major clinical challenge due to the limitations of conventional grafting approaches, including donor-site morbidity, immune incompatibility, and limited tissue availability. Bone tissue engineering has emerged as a promising strategy by integrating biomaterials and cellular systems to enhance bone regeneration. Carbonate apatite (CO3Ap), a biomimetic calcium phosphate ceramic, exhibits favorable osteoconductivity and porosity for cellular attachment and nutrient transport. Additionally, three-dimensional (3D) organoid systems better mimic the native bone microenvironment than 2D cultures. Therefore, this study aimed to develop a 3D bone organoid model using CO3Ap scaffolds and evaluate its in vitro osteogenic potential for bone regeneration.

Methods: Human osteoblast-like cells were divided into three groups: (1) 2D cells cultured on CO3Ap scaffolds (2DS), (2) organoid-only group (OGX), and (3) organoid-scaffold integration group (3DS). Organoids were generated using the liquid overlay technique and cultured for 7 days before scaffold integration. CO3Ap scaffolds were prepared and pre-soaked before cell seeding. Cell viability and proliferation were evaluated by Live/Dead and Alamar Blue assays. Osteogenic differentiation and mineralization were assessed using alkaline phosphatase (ALP) activity and Alizarin Red S (ARS) staining. Immunofluorescence staining was evaluated for cell attachment and cytoskeletal organization.

Results: Osteoblast-like cells demonstrated favorable viability and progressive proliferation in all groups. Enhanced cell attachment and spreading were observed in the 3DS group, indicating improved scaffold-organoid interactions. Early ALP activity suggested osteogenic differentiation, while ARS staining confirmed progressive mineralization over time. Immunofluorescence imaging revealed improved cellular organization and stronger actin formation, particularly in the 3DS group.

Conclusions: The integration of bone organoids with CO3Ap scaffolds provided a favorable biomimetic microenvironment that supported osteoblast viability, attachment, proliferation, and osteogenic differentiation. Enhanced cell-scaffold interactions and bone-like behavior highlighted its potential as an in vitro platform for bone tissue engineering and regenerative medicine applications.

POSTER PRESENTATION

- **Presenter Name:** Huihua Li
- **Author(s):** Huihua Li, Kwun Kei Ng, Fabio R. Leite Juan Zhou, Woon Puay Koh, Marco A. Peres
- **Affiliation(s):** ACP-Research, National Dental Centre Singapore, Singapore, Singapore; Clinical Programme, Duke-NUS Medical School, Singapore, Singapore; School Of Dentistry, University Of Utah, Salt Lake City, Utah, United States; Centre For Sleep And Cognition, National University Of Singapore, Singapore, Singapore; Clinician Scientist Development Unit, National University Of Singapore, Singapore, Singapore
- **Presentation Title:** Denture Use Moderates the Impact of Tooth Loss on Cognition
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: Tooth loss is associated with cognitive decline, but the potential modifying effect of denture use remains unclear. This study examined whether denture wearing modifies the association between number of teeth and domain-specific cognitive performance in older Singaporeans.

Methods: We cross-sectionally analysed baseline data from the SG70 study, a population-based prospective cohort in Singapore. Number of teeth (including crowned/bridged teeth) was determined from intra-oral images and dichotomized as 0–19 vs. 20–28 teeth. Denture wearing was self-reported. Cognitive function was evaluated using a comprehensive neuropsychological battery yielding T-scores (mean=50, SD=10) for seven domains (verbal memory, attention, visuospatial ability, visual memory, language, executive function, processing speed) and a global cognitive score. Effect modification by denture wearing was evaluated using Inverse Probability Weighted (IPW) regression with departure from additivity (95% CI) as the primary contrast, adjusting for age, sex, smoking, education, housing type, and diabetes.

Results: A total of 897 participants (age 74.3 ± 2.6 years, 55.1% female; 63.8% with <20 teeth, of whom 70.3% wore dentures) were included. Tooth loss (0–19 teeth) was universally associated with lower cognitive scores. No statistically significant effect modification by denture wearing was detected across most domains (95% CIs crossing zero). However, denture wearing significantly modified the tooth loss–executive function relationship (departure from additivity: 3.81, 95% CI 0.43–7.18): tooth loss was significantly associated with executive function decline among denture wearers (–3.63, 95% CI –5.73; –1.54) but not among non-denture users (–1.32, 95% CI –4.07; 1.42). Findings were directionally consistent in sensitivity analyses using continuous tooth counts.

Conclusions: Denture wearing did not significantly modify the tooth loss–cognition association across most domains. The significant executive function interaction, where denture wearers showed greater decline, suggests prosthetic adaptation may impose cognitive demands on executive control. Future research should evaluate whether implant-supported solutions reduce this burden.

POSTER PRESENTATION

- **Presenter Name:** Armelia Sari Widyarman
- **Author(s):** Armelia S. Widyarman, Swiluva S. Sumardy Ma, Clairine Lou Citra F. Theodorea
- **Affiliation(s):** Microbiology, Faculty Of Dentistry, Trisakti University, Jakarta, Dki Jakarta, Indonesia; School, Jakarta, Indonesia; Faculty Of Dentistry, Trisakti University, Jakarta, Indonesia; Oral Biology, Faculty Of Dentistry, University Of Indonesia, Jakarta, Indonesia
- **Presentation Title:** Salivary Biomarker Assessment Of Tobacco Smoking Effects On Periodontal Health In Lombok People
- **Category:** General Poster Presentations - Poster Session 2
- **Date / Time / Room:** 17 September 2026 | 2:00 PM -3:15 PM | Angkor Ballroom 3 (Hall 3)

ABSTRACT

Objectives: Periodontal disease is attributable to many causes, one of which is tobacco consumption. There is a lack of molecular-level data on periodontal disease in Lombok, Indonesia. The objective of this study is to evaluate the effect of tobacco use on salivary markers, periodontal pathogens (Porphyromonas gingivalis, Treponema denticola, Fusobacterium nucleatum, Veillonella parvula, and Prevotella intermedia), and pro-inflammatory cytokines (TNF- α and IL-6) among people with periodontitis in Senaru Village, North Lombok

Methods:

Methods: A cross-sectional descriptive study design was used with participants aged 18 to 55 who were either current smokers or non-smokers from North Lombok, Indonesia. Samples of unstimulated and stimulated saliva, gingival crevicular fluid, and subgingival plaque were collected. Salivary pH was measured, periodontal pathogens were analyzed using qPCR, and TNF- α and IL-6 levels were measured with ELISA assays. Clinical measurements of periodontal health (oral hygiene index, gingival index, and papilla bleeding index) were evaluated and compared between groups with significance at $p < 0.05$.

Results: Compared to non-smokers, smokers had lower salivary pH, higher gingival inflammation, and more periodontitis-associated bacteria, with the highest levels of *P. gingivalis*. Smokers had significantly higher levels of TNF- α and IL-6 than non-smokers. ($p < 0.05$)

Conclusions: Tobacco smoking results in increased quantities of periodontal pathogens and increased oral inflammation, supporting the theory that tobacco smoking accelerates the progression of periodontal disease. These findings indicate the need to incorporate smoking cessation programs as part of the treatment for periodontal disease in Lombok.

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- Straight Cutting Edge
 - : Superior downward cutting ability with expanded bone chip pocket volume
- Strong insertion performance




Smooth Type S2

- Sharp & Power Thread
 - : Provides additional initial stability
- Helix Cutting Edge
 - : Maximizes self-tapping to promote smooth bone chip flow and distribution
- Smooth insertion performance




Super Type S3

- Dynamic Wide Thread
 - : Wide thread for stable primary fixation
- Hybrid Cutting Edge
 - : Collects bone chips for stronger primary stability
- Immediate strong primary stability

Implant Selection Matrix

Nominal Diameter	Implant Max Diameter					
	Ø4.0	Ø4.4	Ø4.7	Ø5.0	Ø5.6	Ø6.0
Ø3.5	 S1	 S2	 S3			
Ø4.0						

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40TH ANNUAL SCIENTIFIC MEETING OF THE IADR SOUTHEAST
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